Service Manual
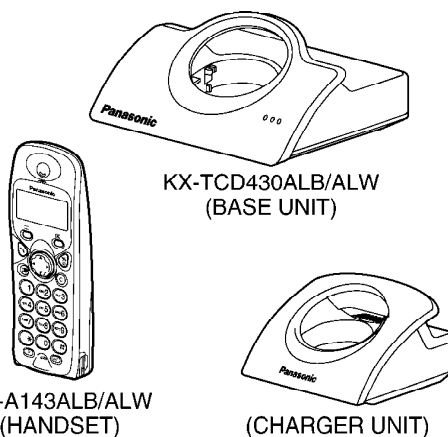
Telephone Equipment

Caller ID Compatible

KX-TCD430ALB / KX-TCD430ALW / KX-TCD432ALB / KX-TCD432ALW / KX-A143ALB / KX-A143ALW

Digital Cordless Phone
Black Version
White Version
(for Australia)

KX-TCD430ALB/ALW
(BASE UNIT)

KX-A143ALB/ALW
(HANDSET)

(CHARGER UNIT)

Configuration for each model

Model No	Base Unit	Handset	Charger
KX-TCD430	1	1 (A143)	
KX-TCD432	1	2 (A143)	1
KX-A143*		1	1

*KX-A143 is also an optional accessory, which contains a handset and a charger.

SPECIFICATIONS

1

SPECIFICATION

Standard:	DECT (Digital Enhanced Cordless Telecommunications) GAP (Generic Access Profile)	Power consumption, Base Unit:	Standby: Approx. 3.5 W / Maximum: Approx. 9.2 W
Number of channels:	120 Duplex Channels	Charger Unit:	Standby: Approx. 2.3 W / Maximum: Approx. 6.8 W
Frequency range:	1.88 GHz to 1.9 GHz	Battery life, Handset	
Duplex procedure:	TDMA (Time Division Multiple Access)	(if batteries are	
Channel spacing:	1728 kHz	fully charged):	Stand-by: Up to 120 hours (Ni-MH)
Bit rate:	1152 kbit/s		Talk: Up to 10 hours (Ni-MH)
Modulation:	GFSK (Gaussian Frequency Shift Keying)	Operating conditions:	5°C — 40°C, 20% — 80% relative air humidity (dry)
		Dimensions, Base Unit	
RF Transmission		(D x W x L):	58 mm x 128 mm x 105 mm
Power:	Approx. 250 mW	Dimensions, Handset	
Voice coding:	ADPCM 32 kbit/s	(D x W x L):	143 mm x 48 mm x 32 mm
Operation range:	Up to 300 m outdoors, Up to 50 m indoors	Dimensions, Charger Unit (D x W x L):	60 mm x 86 mm x 84 mm
Analog telephone		Mass (Weight), Base Unit:	Approx. 170 g
connection:	Telephone Line	Mass (Weight), Handset:	Approx. 120 g
Power source:	AC Adaptor (220 — 240 V, AC 50 Hz)	Mass (Weight), Charger Unit:	Approx. 113 g

Specifications are subject to change.
The illustrations used in this manual may differ slightly from the original device.

IMPORTANT INFORMATION ABOUT LEAD FREE, (PbF), SOLDERING
If lead free solder was used in the manufacture of this product the printed circuit boards will be marked PbF.
Standard leaded, (Pb), solder can be used as usual on boards without the PbF mark.
When this mark does appear, please read and follow the special instructions described in this manual on the
use of PbF and how it might be permissible to use Pb solder during service and repair work.

⚠ **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service
or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

When you note the serial number, write down all 11 digits. The serial number may be found on the bottom of the unit.

Panasonic

Note:

Because CONTENTS 4 to 8 are the extracts from the Operating Instructions of this model, they
are subject to change without notice. Please refer to the original Operating Instructions for
further information.

# 1. ABOUT LEAD FREE SOLDER (PbF: Pb free)

Note:
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to
standard solder or solder that contains lead.
We will use PbF solder when discussing the lead free solder used in our manufacturing process
which is made from Tin (Sn), Silver (Ag), and Copper (Cu).
This model, and others like it, manufactured using lead free solder will have PbF stamped on
the PCB. For service and repair work we suggest using the same type of solder although, with
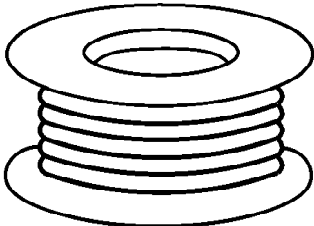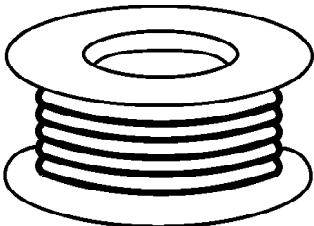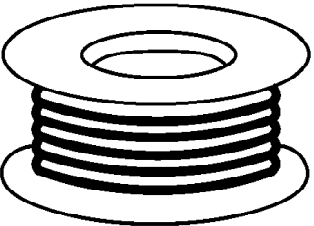some precautions, standard Pb solder can also be used.

Caution

- PbF solder has a melting point that is 50°F ~70°F (30°C ~ 40°C) higher than Pb solder. Please use a soldering iron with temperature control and adjust it to 700°F ± 20°F (370°C ± 10°C). In case of using high temperature soldering iron, please be careful not to heat too long.

- PbF solder will tend to splash if it is heated much higher than its melting point, approximately 1100°F (600°C).

- If you must use Pb solder on a PCB manufactured using PbF solder, remove as much of the original PbF solder as possible and be sure that any remaining is melted prior to applying the Pb solder.

- When applying PbF solder to double layered boards, please check the component side for excess which may flow onto the opposite side (See the figure below).
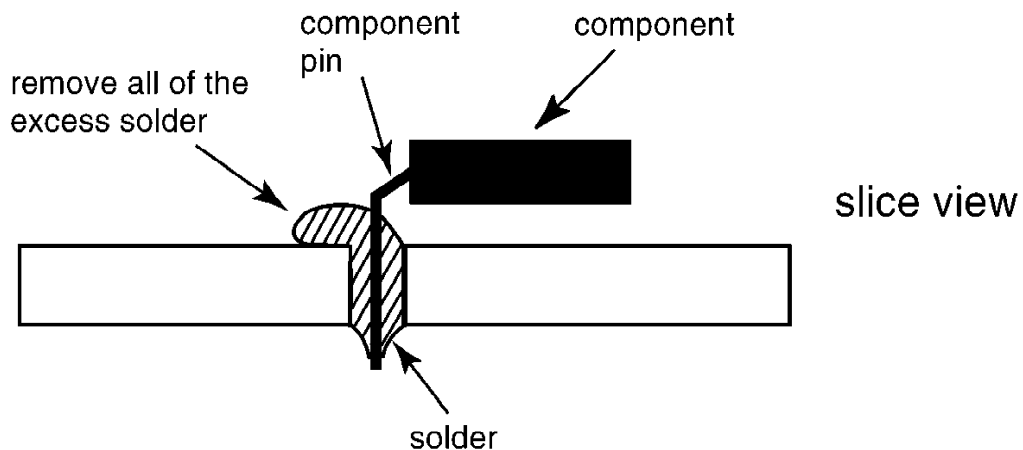
1.1. Suggested PbF Solder

There are several types of PbF solder available commercially. While this product is manufactured using Tin, Silver, and Copper (Sn+Ag+Cu), you can also use Tin and Copper (Sn+Cu) or Tin, Zinc, and Bismuth (Sn+Zn+Bi). Please check the manufacturer's specific instructions for the melting points of their products and any precautions for using their product with other materials.
The following lead free (PbF) solder wire sizes are recommended for service of this product: 0.3 mm, 0.6 mm and 1.0 mm.

0.3 mm X 100 g	0.6 mm X 100 g	1.0 mm X 100 g

1.2. How to recognize that Pb Free solder is used

1.2.1. Base Unit PCB

(Component View)

(Flow Solder Side View)

Note:
The location of the "PbF" mark is subject to change without notice.

1.2.2. Handset PCB

(Component View)

(Flow Solder Side View)

Note:
The location of the "PbF" mark is subject to change without notice.

1.2.3. Charger Unit PCB

Note:
The location of the "PbF" mark is subject to change without notice.

2. FOR SERVICE TECHNICIANS

ICs and LSIs are vulnerable to static electricity.

When repairing, the following precautions will help prevent recurring malfunctions.

1. Cover the plastic parts boxes with aluminum foil.

2. Ground the soldering irons.

3. Use a conductive mat on the worktable.

4. Do not touch IC or LSI pins with bare fingers.

3. CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the manufacture's Instructions.

4. BATTERY

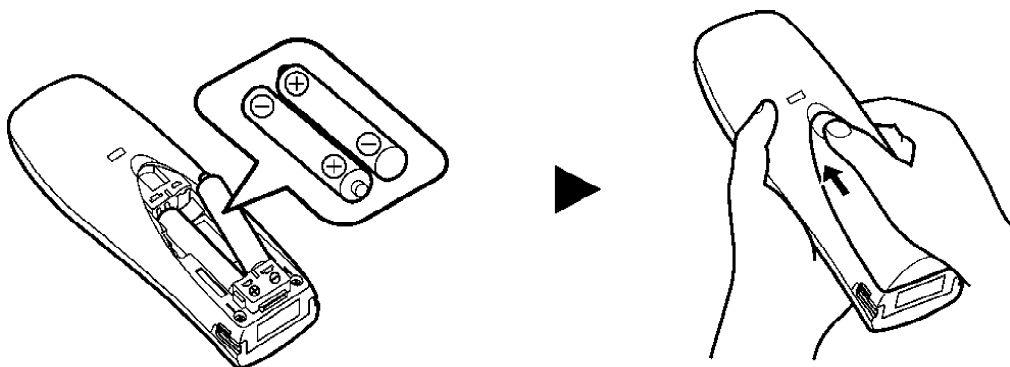## 4.1. Battery Installation

1. Insert the batteries negative (-) terminal first.

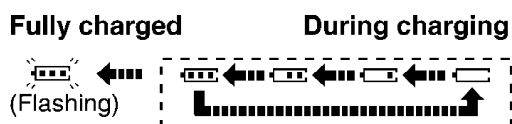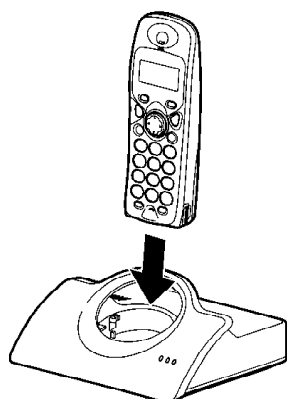**2. Close the battery cover.**

Note:

- Use only rechargeable P03P (Ni-MH)/P03H (Ni-Cd) batteries.

4.2. Battery Charge

Place the handset on the base unit for about 7 hours before initial use.

When the batteries are fully charged, **flashes. When charging, the battery icon is shown as follows.**

Fully charged **During charging**

(Flashing)

Display icons	Battery strength
	High
	Medium
	Low
	Needs to be charged

Note:

- Clean the charge contacts of the handset and base unit with a soft, dry cloth, otherwise the batteries may not charge properly. Clean if the unit is exposed to grease, dust or high humidity.

- If the handset is turned off, it will be turned on automatically when it is placed on the base unit.

Note for Service:

- The battery strength may not be indicated correctly if the battery is disconnected and connected again, even after it is fully charged.

- In that case, by recharging the battery as mentioned above, you will get a correct indication of the battery strength.

4.3. Battery Life

After your Panasonic batteries are fully charged, you can expect the following performance:

Ni-MH batteries (typical 700 mAh)

Operation	Operating time
While in use (talking)	10 hours max.
While not in use (standby)	120 hours max.

Ni-Cd batteries (typical 250 mAh)

Operation	Operating time
While in use (talking)	4 hours max.
While not in use (standby)	40 hours max.

Note:
- **The included batteries are Ni-MH batteries.**
- **Battery operating time may be shortened depending on usage conditions and ambient temperature.**

4.4. Battery Replacement

If ⊟ flashes even when the handset batteries have been fully charged, both batteries must be replaced.

Important:
- **Please use only the Panasonic batteries P03P (Ni-MH)/P03H (Ni-Cd).**
- **Use only rechargeable batteries. If you install non-rechargeable batteries and start charging, the batteries may leak electrolyte.**
- **Do not mix old and new batteries.**
- **Use only 2 nickel metal hydride (Ni-MH) batteries or 2 nickel cadmium (Ni-Cd) batteries. Do not mix battery types.**
- **Ensure that the correct battery type is selected.**

1. **Press the notch on the cover firmly and slide it in the direction of the arrow.**
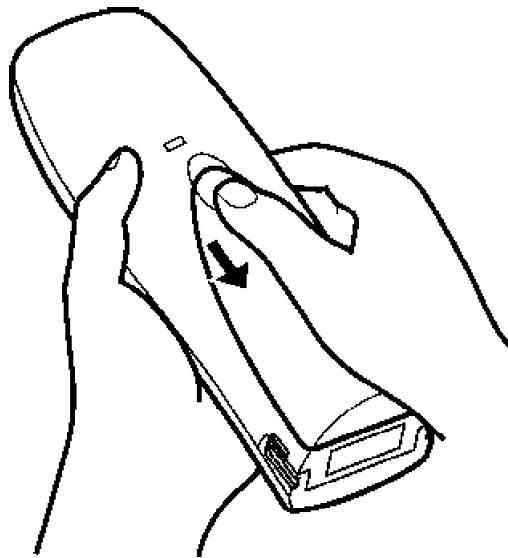
2. Remove the batteries positive (+) terminal first. Replace both batteries.

Note for Service:

- When Ni-Cd batteries are fitted with the `"BATTERY TYPE"` **setting in** `"NI-MH"`, icon **might disappear and stop charging even if the handset is on the cradle for avoiding overcharge.**

5. LOCATION OF CONTROLS

5.1. Base Unit

Charge contacts

[⑴] (Page)

5.2. Handset

Receiver

Display

[⌐] (Phonebook)

[↘] (Talk)

Navigator*1

[○●] (Redial/Pause)

[R] (Recall)

Charge contacts

Microphone

[◲] (Menu/OK)

[✄○] (Off/Power)

[C] (Clear)

[INT] (Intercom)

Charge contacts

• *1: [▲][▼]: To search for the desired item in the setting menu, caller information or phonebook.
  [▶]: To select the desired item or move the cursor to the right.
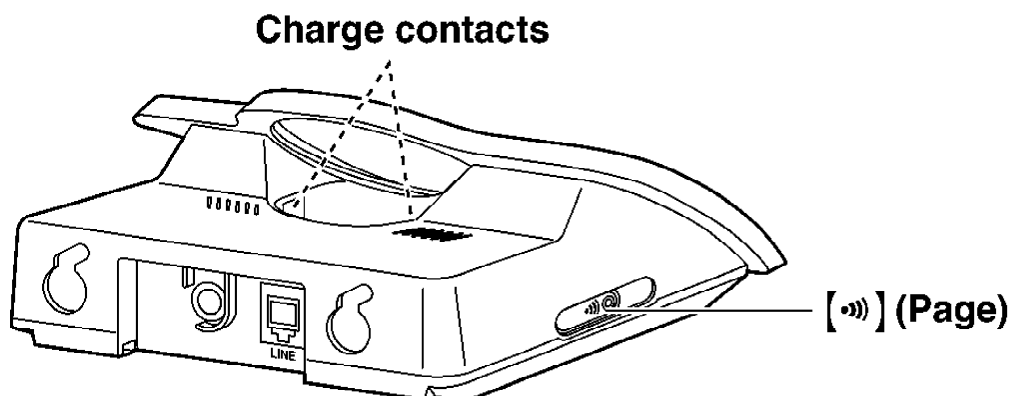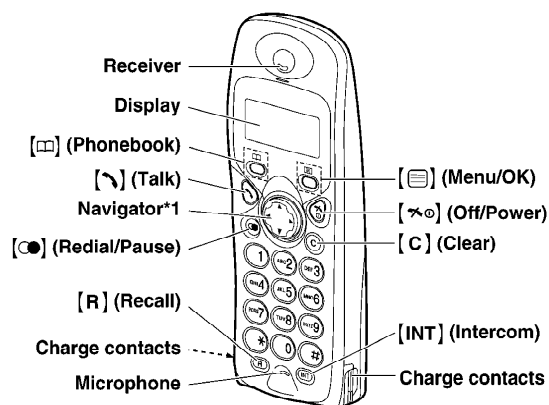 [◀]: To go back to the previous display or move the cursor to the left.

6. SETTINGS

Important information

General

- Use only the power supply included with this products.
- Do not connect the AC adaptor to any AC outlet other than a standard 220-240 V AC outlet.
- This product is unable to make calls when:
- The portable handset batteries need recharging or have failed.
- There is a power failure.
- The key lock feature is turned on.
- The call bar feature is turned on (only numbers stored as emergency numbers can be called).
- Do not open the base unit or handset (other than to change the batteries).
- This product should not be used near emergency/intensive care medical equipment and should not be used by people with pacemakers.
- Care should be taken that objects do not fall onto, and liquids are not spilled into, the unit. Do not subject this product to excessive smoke, dust, mechanical vibration or shock.

Environment

- Do not use this product near water.

- This product should be kept away from heat sources such as radiators, cookers, etc. It should also not be placed in rooms where the temperature is less than 5°C or greater than 40°C.
- The AC adaptor is used as the main disconnect device. Ensure that the AC outlet is located/installed near the unit and is easily accessible.

Location
For maximum distance and noise-free operation, place your base unit:
- Away from electrical appliances such as TVs, radios, personal computers or other phones.
- In a convenient, high and central location.

Warning:
- To prevent the risk of electrical shock, do not expose this product to rain or any other type of moisture.

6.1. Connections

6.1.1. Base Unit
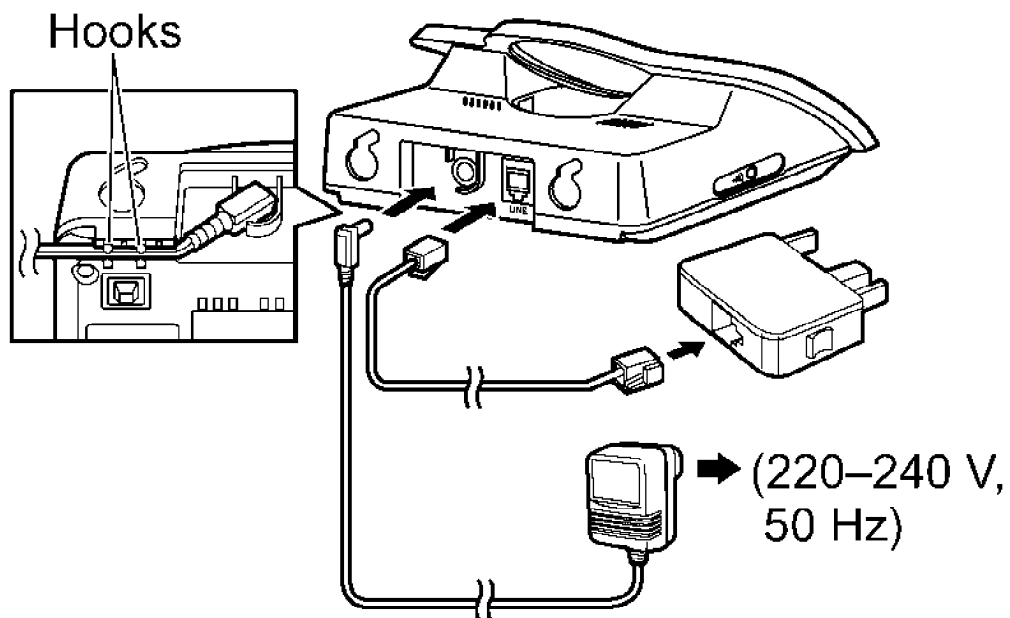
- If the handset is not charged, you cannot make or answer calls.
- Never install telephone wiring during a lightning storm.
- The AC adaptor must remain connected at all times. (It is normal

for the adaptor to feel warm during use.)
- Use only the AC adaptor PQLV19ALZ.

6.1.2. Charger Unit
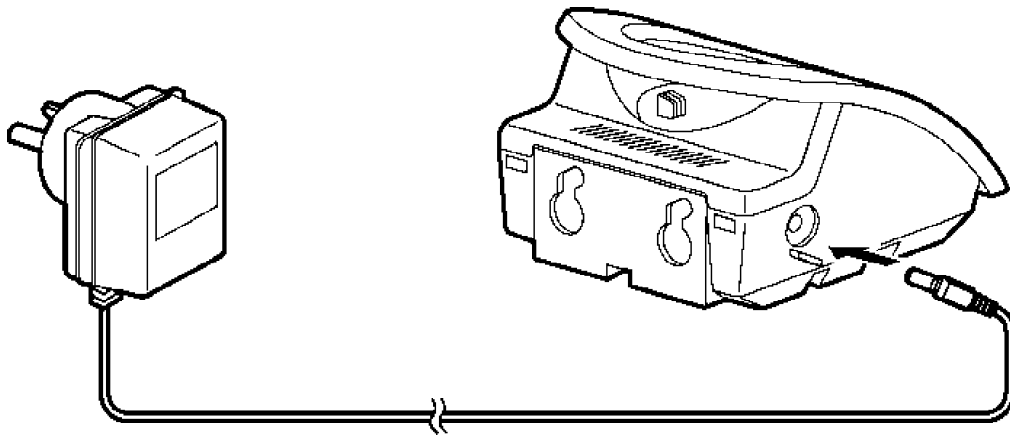
- The AC adaptor must remain connected at all times (It is normal for the adaptor to feel warm during use).
- Use only the AC adaptor PQLV200ALZ.

6.2. Ringer Volume

6.2.1. Base Unit

4 levels (high/medium/low/off) are available.

1 Press [▤].
2 Press [▼] repeatedly to display "SETTING BS", then press [▶].
3 Press [2] 2 times.
4 Select the desired setting by pressing [1] for low, [2] for medium, [3] for high or [0] for off.
5 Press [▶], then press [☌].

6.2.2. Handset

You can select the desired ringer volume from off, level 1 to 6 or ✳6.

1 Press [▤].
2 Press [▼] repeatedly to display "SETTING HS", then press [▶].
3 Press [▼] repeatedly to display "RINGER OPT", then press [▶].
4 Press [▼] repeatedly to display "RINGER VOL", then press [▶].
5 Press [▲] or [▼] repeatedly to select the desired volume, then press [▶].
6 Press [☌].

Note:
　• When the ringer volume is set to off, the following will be displayed.

··0··
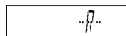
6.3. PIN Code

6.3.1. Base Unit

The base unit's default PIN is "0000".

1 Press [≡].

2 Press [▼] repeatedly to display "SETTING BS", then press [▶].

3 Press [5].

4* Enter the current 4-digit base unit PIN.

5 Enter the new 4-digit base unit PIN.

6 Enter the new 4-digit base unit PIN again.

7 Press [✶⊚].

For Service Hint:

* : If the current 4-digit PIN is forgotten, press $\boxed{✶}\boxed{7}\boxed{0}\boxed{0}\boxed{0}$ **and you will be able to enter new PIN.**

6.3.2. Handset

The handset's default PIN is "0000".

1 Press [≡].

2 Press [▼] repeatedly to display "SETTING HS", then press [▶].

3 Press [▼] repeatedly to display "OTHER OPT", then press [▶].

4 Press [▼] repeatedly to display "HSPIN CHANGE", then press [▶].

5* Enter the current 4-digit handset PIN.

6 Enter the new 4-digit handset PIN.

7 Enter the new 4-digit handset PIN again.

8 Press [✶⊚].

For Service Hint:

* : If the current 4-digit PIN is forgotten, press $\boxed{✶}\boxed{7}\boxed{0}\boxed{0}\boxed{0}$ **and you will be able to enter new PIN.**

6.4. Reset

6.4.1. Base Unit

1 Press [≡].

2 Press [▼] repeatedly to display "SETTING BS", then press [▶].

3 Press [0].

4 Enter "0000" (default base unit PIN).
  • If you changed PIN, enter it.

5 Press [▶], then press [✶⊚].

Note:

- The emergency number setting will not be reset.

Base Unit Initial Settings

Function	Initial Setting	Remarks (selectable o
Base Unit Ringer Volume	2	1 to 3, OFF
Ringer Mode	All Handsets	All Handsets/Specific Har
Number of Rings (Ringer Mode)	3	Up to 6 rings
Tone/Pulse	Tone	Tone/Pulse
Pause Length	3 seconds	3 seconds/5 seconds
Call Restricted Handsets	All Clear	Each Handset can be set individually.
Call Restriction Numbers	All Clear	Up to 10 numbers (up to 8
4-Digit Base Unit PIN	0000	-
Caller ID	All Clear	Up to 50 different callers.

6.4.2. Handset

1 Press [☰], [▼], [▶], [▲] and [▶].
2 Enter "0000" (default handset PIN).
 • If you changed PIN, enter it.
3 Press [▼], [▶] and [☎].

Note:

- Phonebook entries will not be erased.
- The battery type setting will not be reset.

Handset Initial Settings

Function	Initial Setting	Remarks (selectable o
Select Base Unit	Auto	-
Time Alarm Mode	OFF	OFF/Once/Daily
Alarm Time	Clear	-
Handset Ringer Volume	6	1 to 6, *6, OFF
Handset External Ringer Pattern	1	20 patterns
Handset Internal Ringer Pattern	1	20 patterns
Handset Paging Tone Pattern	1	20 patterns
Handset Alarm Tone Pattern	1	20 patterns
Key Tone	ON	ON/OFF
Call Waiting Tone	ON	ON/OFF
Range Warning Alarm	OFF	OFF/ON
Battery Low Alarm	ON	ON/OFF
Standby Mode Display	Clock	Clock/OFF/Base No./Hand
Talk Mode Display	Talk Time	Talk Time/Phone No.
Display Language	English	10 languages
Call BAR	OFF	OFF/ON
Direct Call Mode	OFF	OFF/ON

Direct Call Number	Clear	Up to 24 digits
4-Digit Handset PIN	0000	-
Auto Talk	OFF	OFF/ON
Redial Memory	All Clear	-
Handset Receiver Volume	2	1 to 3

6.5. Key Lock

The dial keys can be locked so that no calls can be made. Only incoming calls will be accepted while key lock is on.

To turn on key lock, press [▢] for about 2 seconds.
• A beep will sound and the following will be displayed.
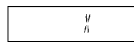
To turn off key lock, press [▢] for about 2 seconds.

Note:

- Emergency calls cannot be made until key lock is turned off.
- Key lock is turned off when the handset is turned off.

6.6. R button to use the recall feature

[R] is used to access optional telephone services. Contact your service provider for details.
If your unit is connected to a PBX (private branch exchange), pressing [R] can allow you to access certain features of your host PBX such as transferring an extension call.

● Users in Australia can access Telstra's "EASY CALL" service by having the recall time set at 100 ms (default setting), and then follow Telstra's "EASY CALL" instructions to operate this service.

6.7. Pause button for PBX line/long distance service users

A pause is sometimes required when making calls using a PBX or long distance service.

Example: If you have to dial [0] before dialling outside numbers manually, you will probably pause after dialling [0] until you hear a dial tone.

1 Press [0].
2 Press [◖●].
   • "P" will be displayed.
3 Dial the phone number.
4 Press [↘].

Note:
   • Pressing [◖●] once creates one pause.
   Press [◖●] repeatedly to create longer pauses.

6.8. Setting Call Restriction

You can restrict selected handsets from dialling certain phone numbers. You can assign up to 10 phone numbers (memory locations 1-10) to be restricted per handset. If a restricted number is dialled, the call will not be connected and the restricted number will flash on the display. For example, storing an area code will prevent a handset from dialling a long distance call.

1 Press [▤].

2 Press [▼] repeatedly to display "SETTING BS", then press [▶].

3 Press [6].

4 Enter "0000" (default base unit PIN).
- If you changed PIN, enter it.
- All the registered handset numbers will be displayed.
- Flashing numbers indicate call restriction is turned on for the corresponding handset.

5 Press the desired handset numbers.
- The selected handset numbers will flash.
- To cancel a selected handset number, press the number again. The number will stop flashing.

6 Press [▶].

7 Enter the phone number to be restricted (8 digits max.).
- If you enter a number when a previously stored number is already displayed, the new number will erase the old number.
- To select a different memory location, press [▶] repeatedly and enter a number.

8 Press [▶].

9 Press [✶◎].

6.9. Cancelling a Restricted Number

1 Press [▤].

2 Press [▼] repeatedly to display "SETTING BS", then press [▶].

3 Press [6].

4 Enter "0000" (default base unit PIN).
- If you changed PIN, enter it.

5 Press [▶] repeatedly to display the desired number.

6 Press [C].

7 Press [▶], then press [✶◎].

6.10. Setting Call BAR

This feature prohibits making outgoing calls. When call bar is turned on, only intercom calls and emergency calls can be made.

1 Press [▤].

2 Press [▼] repeatedly to display "SETTING HS", then press [▶].

3 Press [▼] repeatedly to display "CALL OPT", then press [▶].

4 Press [▼] repeatedly to display "CALL BAR", then press [▶].

5 Enter "0000" (default handset PIN).
- If you changed PIN, enter it.

6 Press [▼] repeatedly to select "ON" or "OFF", then press [▶].

7 Press [✶◎].

Note:
- While this feature is turned on, the following will be displayed.

```
  --]--
```

6.11. Selecting the Display Language

10 display languages are available.

1 Press [▤].

2 Press [▼] repeatedly to display "SETTING HS", then press [▶].

3 Press [▼] repeatedly to display "DISPLAY OPT", then press [▶].

4 Press [▼] repeatedly to display "LANGUAGE", then press [▶].

5 Press [▼] repeatedly to select the desired language, then press [▶].

6 Press [✆].

Note:

- If you select a language you cannot read, reset the handset to its default settings. Refer to <u>Handset</u> () in "Reset".

7. DISPLAY

7.1. Handset Display

Icons	Meaning	Icons	Meaning
Ⴤ	Within range of base unit	⊞	Battery strength is high
⸜Ⴤ⸝	Out of range, no registration or no power on base unit	⸱⸱Ɗ⸱⸱	Call bar is on
•)))	Paging, intercom mode or accessing base unit	Ɩ	Direct call is on
☎	Making or answering a call	|/ /\	Key lock is on
📖	Phonebook mode	⸱⸱Ɽ⸱⸱	Ringer volume is off
⇢	Setting mode	⁻⸱⸱⁻	Displayed when you press [☎]
▭	Battery strength is low		

7.2. Caller ID Service

Important:

This unit is Caller ID compatible. To display the caller's phone number, you must subscribe to Caller ID service. After subscribing to Caller ID service, this unit will display caller information.

How Caller ID is displayed

The unit will display the calling party's phone number after the first ring. You can view the caller information of the last 50 different callers.

When new calls have been received, the display will show the number of new calls.

The number of new calls will be cleared after viewing all caller information.

Example: 4 new calls have been received.

04
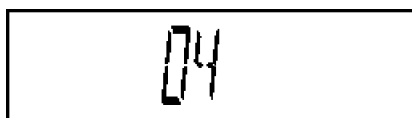
Note:

- When you receive a call from the same phone number you stored with a name in the phonebook, the display will show the stored name.

- If the unit is connected to a PBX system, you may not receive the caller information.

- When the caller dialled from an area which does not provide Caller ID service, "OUT OF AREA" will be displayed.

- When the caller requested not to send caller information, either no information or "PRIVATE" will be displayed.

- The display will not show caller information while using the handset for an intercom call. However, the caller information will be stored.

7.3. Before Requesting Help (Troubleshooting)

If you still have difficulties after following the instructions in this section, disconnect the AC adaptor and turn off the handset, then reconnect the AC adaptor and turn on the handset.

is flashing.
- The handset is not registered to the base unit. Register it. (*1)
- The handset is too far from the base unit. Move closer.
- The AC adaptor is not connected. Check the connections.

I cannot make or receive calls.
- The AC adaptor or telephone line cord is not connected. Check the connections.
- If you are using a splitter to connect the unit, remove the splitter and connect the unit to the wall socket directly. If the unit operates properly, check the splitter.
- Disconnect the base unit from the telephone line and connect the line to a known working telephone. If the working telephone does not operate properly, contact your service provider.
- The call bar feature is turned on. Turn it off. (*2)
- You dialled a call restricted number.
- The key lock feature is on. Turn it off. (*3)

The unit does not ring.
- The ringer volume is turned off. Adjust the handset ringer volume and the base unit ringer volume. (*4)

The handset display is blank.
- The handset is not turned on. Turn the power on.

The handset will not turn on.
- Make sure that the batteries are installed correctly. (*5)
- Fully charge the batteries.
- Clean the charge contacts and charge again.

The battery should be charging but the battery icon does not change.
- Clean the charge contacts and charge again.
- The AC adaptor is disconnected. Plug in the AC adaptor.

A busy tone is heard when [ ] is pressed.
- The handset is too far from the base unit. Move closer and try again.
- Another handset is on an outside call. Wait for the other user to complete the call.

Static, sound cuts in/out, fades. Interference from other electrical units.
- Locate the handset and the base unit away from other electrical appliances.
- Move closer to the base unit.

The handset stops working while being used.
- Disconnect the AC adaptor and turn off the handset. Connect the AC adaptor, turn on the handset and try again.

While storing an entry in the phonebook or assigning a hot key, the handset starts to ring.
- A call is being received. To answer the call, press [ ]. Programming will be cancelled. Start again.

Pressing [ ] does not display/dial the last number dialled.
- If the redialled number was more than 24 digits long, the number will not be redialled. Redial the number manually.

The handset beeps intermittently and/or flashes.
- Fully charge the batteries. (*6)

I fully charged the batteries, but still flashes.
- Clean the charge contacts and charge again. (*6)
- It is time to replace the batteries.

disappears and the unit stops charging when the handset is on the base unit.
- Nickel cadmium batteries are inserted when the battery type is set to "NI-MH". Change the battery type setting to "NI-CD".

Caller information is not displayed.
- You must subscribe to Caller ID service.

While viewing caller information, the display returns to standby mode.
- Do not pause for over 60 seconds while searching.

I cannot register a handset to a base unit.
- The maximum number of base units (4) are already registered to the handset. Cancel unused base unit registrations from the handset. (*7)
- The maximum number of handsets (6) are already registered to the base unit. Cancel unused handset registrations from the base unit. (*8)
- You entered the wrong PIN number. If you forget your PIN, refer to "For Service Hint" in **PIN Code**.
- Locate the handset and the base unit away from other electrical appliances.

Cross Reference:
(*1) **Registering a Handset to a Base Unit** ()
(*2) **Setting Call BAR** ()
(*3) **Key Lock** ()
(*4) **Ringer Volume** ()
(*5) **Battery Installation** ()
(*6) **Battery Charge** ()

(*7) Cancelling a Base Unit ()
(*8) Cancelling a Handset ()

8. OPERATIONS

8.1. Turning the Power On/Off

Power on

Press [✆] for about 1 second.
• The display will change to the standby mode.

Power off

Press [✆] for about 2 seconds.
• The display will go blank.

8.2. Setting the Time and Date

Important:
• Confirm that the AC adaptor is connected.
• Ensure that Ψ is not flashing.

1 Press [▤].

2 Press [▼] repeatedly to display "SETTING BS", then press [▶].

3 Press [✳].

4 Enter the current hour and minute by selecting 2 digits for each (24-hour time entry).
   Example: 15:15
   Press [1][5] [1][5].
   • If you make a mistake, press [C]. Digits will be cleared from the right.

5 Press [▶].
   • "SETTING BS" will be displayed.

6 Press [▶], then press [✳] 2 times.

7 Enter the current day, month and year by selecting 2 digits for each.
   Example: 17 May, 2004
   Press [1][7] [0][5] [0][4].
   • If you make a mistake, press [C]. Digits will be cleared from the right.

8 Press [▶].
   • "SETTING BS" will be displayed.

9 Press [✆].

Note:

- If a power failure occurs, set the time and date again.

8.3. Redialling

8.3.1. Making a Call Using the Redial List

The last 10 phone numbers dialled are stored in the redial list.

1 Press [◉].
   • The last number dialled will be displayed.

2 Press [▼] repeatedly to select the number.
   • To exit the list, press [✆].

3 Press [↘].

8.3.2. Redialling the Last Number Dialled

Press [↘], then press [◉].

8.4. Phonebook

8.4.1. Storing Phone Numbers and Names

Up to 20 phone numbers can be stored in the phonebook for quick access.

1 Press [▤] 2 times.
2 Enter a phone number (24 digits max.).
  • Each number stored in the phonebook will be given an index number (01–20). This number will be shown to the left of the stored phone number.
3 Press [▤].
4 Enter the party's name (9 characters max.; see the character table).
5 Press [▤].
  • To store other entries, repeat from step 2.
6 Press [✱☉].

Character Table

Keys	Characters	Keys	Characters
[1]	# [ ] ✱ , − / 1	[6]	M N O 6
[2]	A B C 2	[7]	P Q R S 7
[3]	D E F 3	[8]	T U V 8
[4]	G H I 4	[9]	W X Y Z 9
[5]	J K L 5	[0]	(Space) 0

Note:
  • To enter another character located on the same dial key, press [▶] to move the cursor to the next space.
  • If there is no space to store new entries, "MEMORY FULL" will be displayed. Erase unnecessary entries.

Editing a Stored Entry

1 Press [▥].
2 Press [▲] or [▼] repeatedly to display the desired entry, then press [▶].
3 Press [▼] repeatedly to display "EDIT", then press [▶].
  • If you do not need to edit the phone number, skip to step 5.
4 Edit the phone number.
5 Press [▤].
  • If you do not need to edit the name, skip to step 7.
6 Edit the name. See the character table.
7 Press [▤].

Erasing a Stored Entry

1 Press [▥].
2 Press [▲] or [▼] repeatedly to display the desired entry, then press [▶].
3 Press [▼] repeatedly to display "CLEAR", then press [▶].
4 Press [▼] repeatedly to display "YES", then press [▶].
  • To cancel erasing, select "NO".
  • To erase other entries, repeat from step 2.
5 Press [✱☉].

Making Calls Using the Phonebook

Before using this feature, store the desired phone numbers and names into the phonebook.
1 Press [▥].
2 Press [▲] or [▼] repeatedly to display the desired entry.
3 Press [✎].

8.4.2. Storing a Number from the Caller ID List into the Phonebook

1 Press [▲] or [▼] repeatedly to display the desired entry, then press [▶].
2 Press [▼] repeatedly to display "SAVE TEL NO", then press [▶].
3 Press [▤].
4 Enter the party's name (9 characters max.).
5 Press [▤].
6 Press [✱☉].

8.4.3. Storing a Number from the Redial List into the Phonebook

1 Press [◖●].

2 Press [▼] repeatedly to select the number, then press [▶].

3 Press [▼] repeatedly to display "SAVE TEL NO", then press [▶].

4 Press [▤].

5 Enter the name (9 characters max.).

6 Press [▤].

8.5. Hot Key (Quick Dial)

Dial keys [1] to [9] can each be used as a "hot key", allowing you to dial a number from the phonebook by simply pressing a dial key.

Assigning an Entry in the Phonebook to a Hot Key

1 Press [▱].

2 Press [▲] or [▼] repeatedly to display the desired entry, then press [▶].

3 Press [▼] repeatedly to display "HOT KEY REG", then press [▶].

4 Press [▼] repeatedly to select the desired dial key ([1] to [9]), then press [▶].
  • If the dial key is already assigned as a hot key, the displayed number will flash.

5 Press [▼] repeatedly to display "YES", then press [▶].
  • To register other entries, repeat from step 2.

6 Press [⤢◎].

Making Calls Using a Hot Key

1 Press and hold the desired hot key ([1] to [9]).
  • You can view other hot key registrations by pressing [▲] or [▼].

2 Press [↘].

Erasing a Hot Key

1 Press and hold the desired hot key ([1] to [9]), then press [▶].
  • "CLEAR" will be displayed.

2 Press [▶].

3 Press [▼] repeatedly to display "YES", then press [▶].

4 Press [⤢◎].

Note:

- The number erased from a hot key will not be deleted from the phonebook.

8.6. Registering a Handset to a Base Unit

To register an additional handset to a base unit (easy registration)

The included handset and base unit are preregistered. After purchasing an additional handset, register it to the base unit using the following method.

1 Lift the additional handset and press [✕☏].

2 Press and hold [•))] on the left side of the base unit for about 5 seconds, until the registration tone sounds.

3 Place the additional handset on the base unit. The registration tone continues to sound. With the handset still on the base unit, wait until a confirmation tone sounds and Ƴ stops flashing.

Note:
- If an error tone sounds, or if Ƴ is still flashing, register the handset manually (manual registration).
- If all registered handsets start ringing in step 2, press [•))] to stop, then start again.
- Charge the batteries of your additional handset for about 7 hours before initial use.
- This registration method cannot be used for handsets that have already been registered to a base unit. Register the handset manually.

To register a handset to an additional base unit (manual registration)

You can register a handset to a base unit manually using the following method.

1 Press [▤].

2 Press [▼] repeatedly to display "SETTING HS", then press [▶].

3 Press [▼] repeatedly to display "REGISTRATION", then press [▶].

4 Press [▼] repeatedly to display "REGISTER HS", then press [▶].

5 Press and hold [•))] on the left side of the base unit for about 5 seconds, until the registration tone sounds.
- After pressing [•))], the rest of the procedure must be completed within 1 minute.

6 Press [▼] repeatedly to select a base unit number, then press [▶].

7 Wait until "BS PIN" is displayed, then enter "0000" (default base unit PIN).
- If you changed PIN, enter it.

8 Press [▶].
- When the handset has been registered successfully, a confirmation tone will sound, and Ƴ will stop flashing.

Note:
- If all registered handsets start ringing in step 5, press [•))] to stop, then start again from step 1.

8.6.1. Cancelling a Handset

A maximum of 6 handsets can be registered to a base unit. A handset can cancel its own registration (or the registration of another handset) that is stored in the base unit. This will allow the base unit to "forget" the handset.

1 Press [▤].

2 Press [▼] repeatedly to display "SETTING BS", then press [▶].

3 Press [7].

4 Enter "0000" (default base unit PIN).
- If you changed PIN, enter it.

5 Press the desired handset number.
- The selected handset number will flash.

6 Press [▶].

7 Wait until "SETTING BS" is displayed, then press [✕☏].

8.6.2. Cancelling a Base Unit

A handset can be registered to a maximum of 4 base units. A handset can cancel a base unit that it is registered to. This will allow the handset to "forget" that base unit.

1 Press [▤].

2 Press [▼] repeatedly to display "SETTING HS", then press [▶].

3 Press [▼] repeatedly to display "REGISTRATION", then press [▶].

4 Press [▼] repeatedly to display "CANCEL BS", then press [▶].

5 Enter "0000" (default handset PIN).
- If you changed PIN, enter it.

6 Press [▼] repeatedly to select the desired base unit number, then press [▶].
- The selected base unit number will flash.

7 Press [▶].

8 Press [▼] repeatedly to select "YES", then press [▶].
- To stop cancelling, select "NO".

9 Press [✕☏].

8.7. Selecting a Base Unit

When "AUTO" is selected, the handset will automatically use any available base unit it is registered to.
When a specific base unit is selected, the handset will make and receive calls using that base unit only.
If the handset is out of range of that base unit, no calls can be made.

1 Press [▤].

2 Press [▼] repeatedly to display "SETTING HS", then press [▶].

3 Press [▼] repeatedly to display "SELECT BS", then press [▶].

4 Press [▼] repeatedly to display "AUTO" or a specific base unit number, then press [▶].
   • The handset starts searching for the base unit.

Note:
   • When a handset is registered to another base unit, this setting will automatically change to that base unit's number even if "AUTO" was selected.

9. DISASSEMBLY INSTRUCTIONS

9.1. Base Unit

(A)

Remove the Main P.C. Board
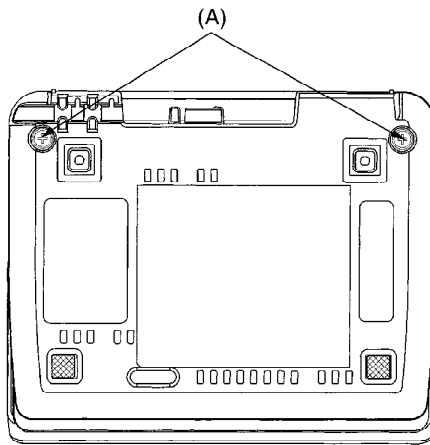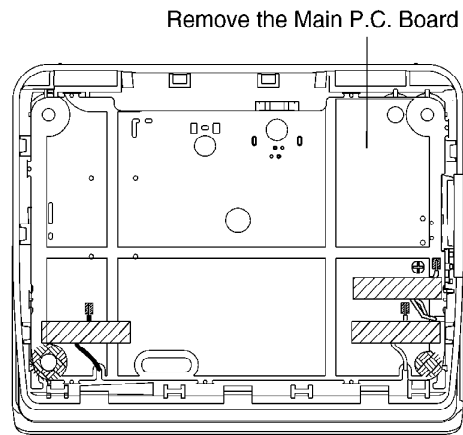
Fig. 1   Fig. 2

Shown in Fig.-	To Remove	Remove
1	Lower Cabinet	Screws (2.6 × 12)..........(A) × 2
2	Main P.C. Board	Main P.C. Board

9.2. Handset

(C)

Remove the
Main P.C. Board

Rear Cabinet

(B)   (D)
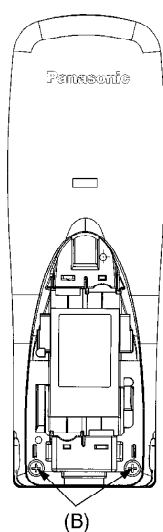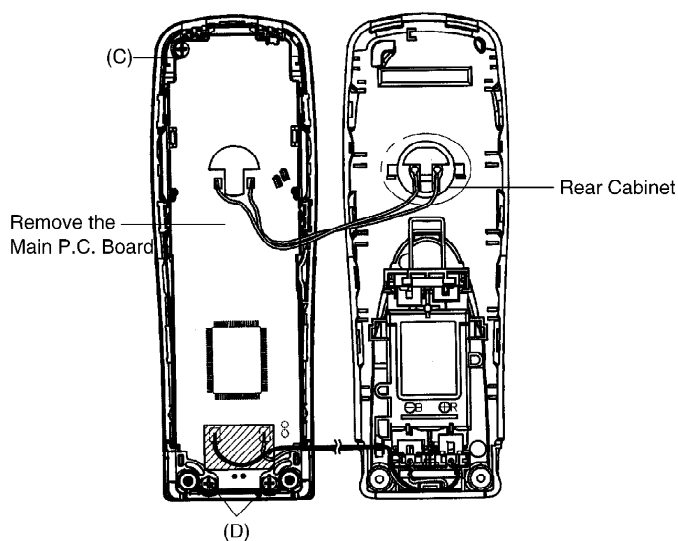
Fig. 3   Fig. 5
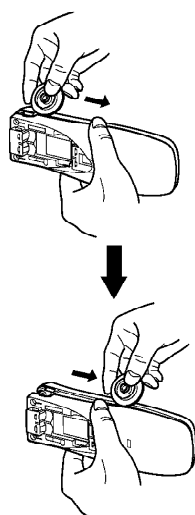
Insert a JIG (PQDJ10006Y) between the Front and the Rear Cabinet, then pull it along the gap to open the Cabinet.
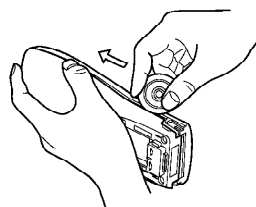
Likewise, open the other side of the Cabinet.
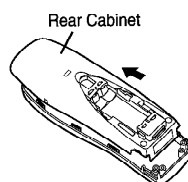
Rear Cabinet

Remove the Rear Cabinet by pushing it upward.

Fig. 4

Shown in Fig.-	To Remove	Remove
3	Rear Cabinet	Screws (2 × 8)..........(B) × 2
4	Rear Cabinet	Follow the procedure.
5	Main P.C. Board	Screw (2 × 8)..............(C) × 1
		Screws (2 × 8).............(D) × 2
		Main P.C. Board

9.3. Charger Unit

Remove the Main P.C. Board

(E)
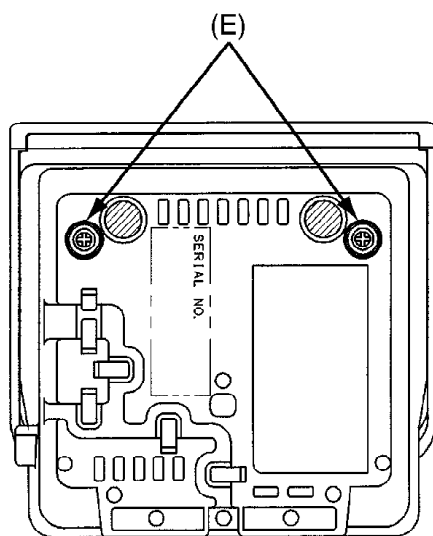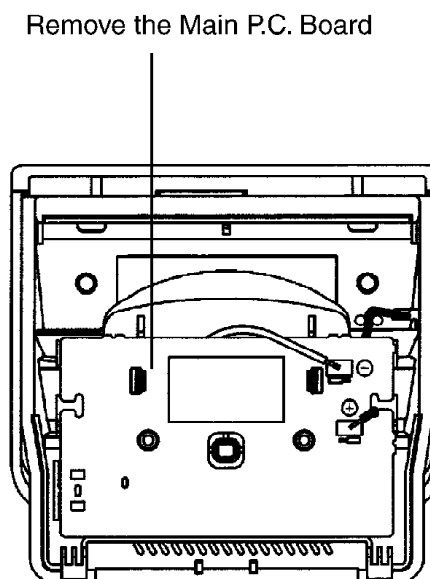
Fig. 6   Fig. 7

Shown in Fig.-	To Remove	Remove
6	Lower Cabinet	Screws (2.6 × 14)..........(E) × 2
7	Main P.C. Board	Main P.C. Board

10. ASSEMBLY INSTRUCTIONS

10.1. Warning When Constructing the Base Unit

10.2. Processing of Ringer/Charge Terminal Lead

① Attach Ringer to Cabinet.
② Fix Charge Lead with Himeron Tape.
③ Attach P. C. B to Cabinet.

* Not to cover the hatching area
  by Himeron Tape.

Locate inside Boss.

* Position along this line.
  Insert enough so that there may be no float of Ringer.
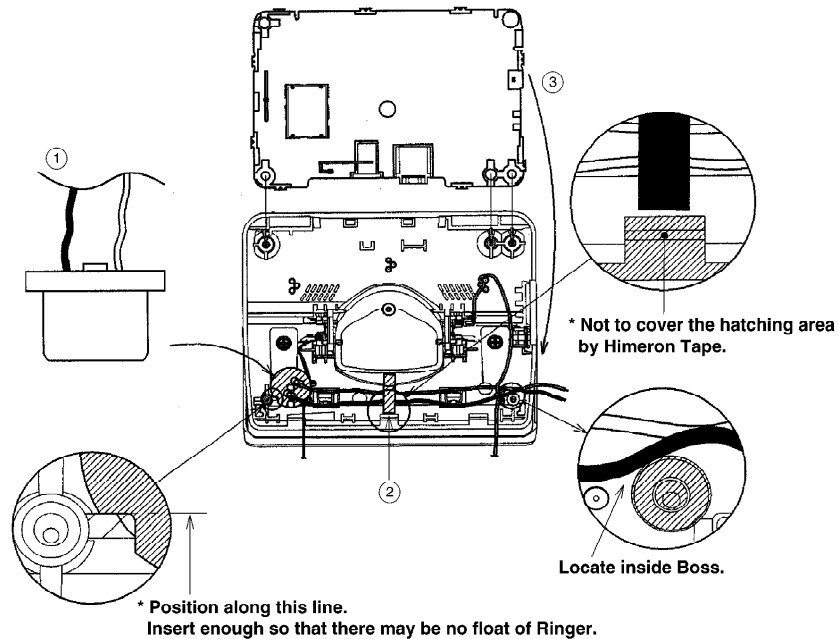
④ Pull out Charge Lead Wire through the slit of P. C. B.
⑤ Pull out Charge Lead Wires (2 pieces) through the slit of P. C. B.
⑥ ~ ⑨ Solder Lead Wires to P. C. B.
⑩ ~ ⑫ Fix Lead Wires with Himeron Tape.

* Lead must not go into
  silk printed side.

* Not to cover the hatching area by tapes above.
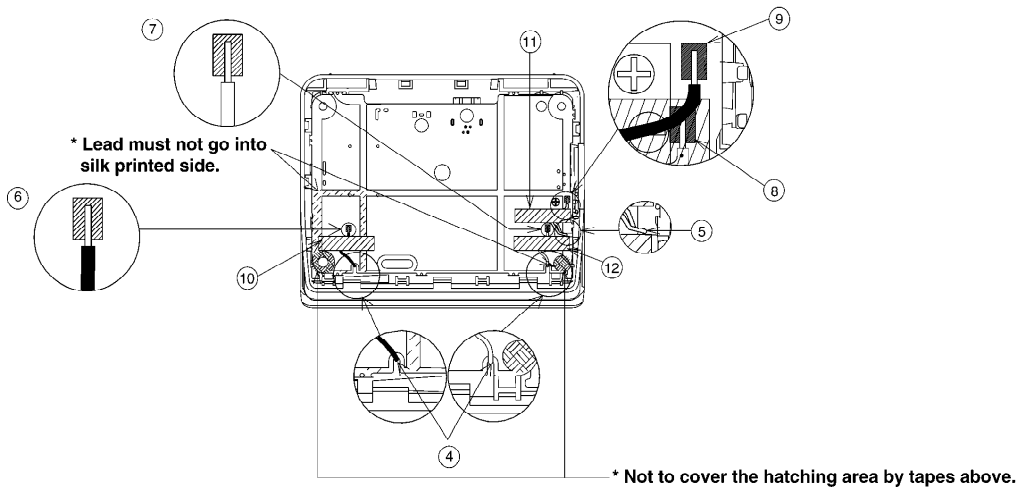
11. TROUBLESHOOTING GUIDE

Flow Chart

Flowchart

| Power ON Base Unit | —Not Work→ | **Check Power** |

OK ↓

| Bell | —No Bell→ | **Bell Reception** |

OK ↓

| Link |

Not Link ↓ → | Battery Charge | —Not Charge→ | **Check Battery Charge** |

OK → **Check Link**

OK ↓ (from Link)

| Handset Voice Transmission | —No Voice→ | **Check Handset Transmission** |

OK ↓

| Handset Voice Reception | —No Voice→ | **Check Handset Reception** |

OK ↓

| DTMF dial | —No Signal→ | **SIGNAL ROUTE** |
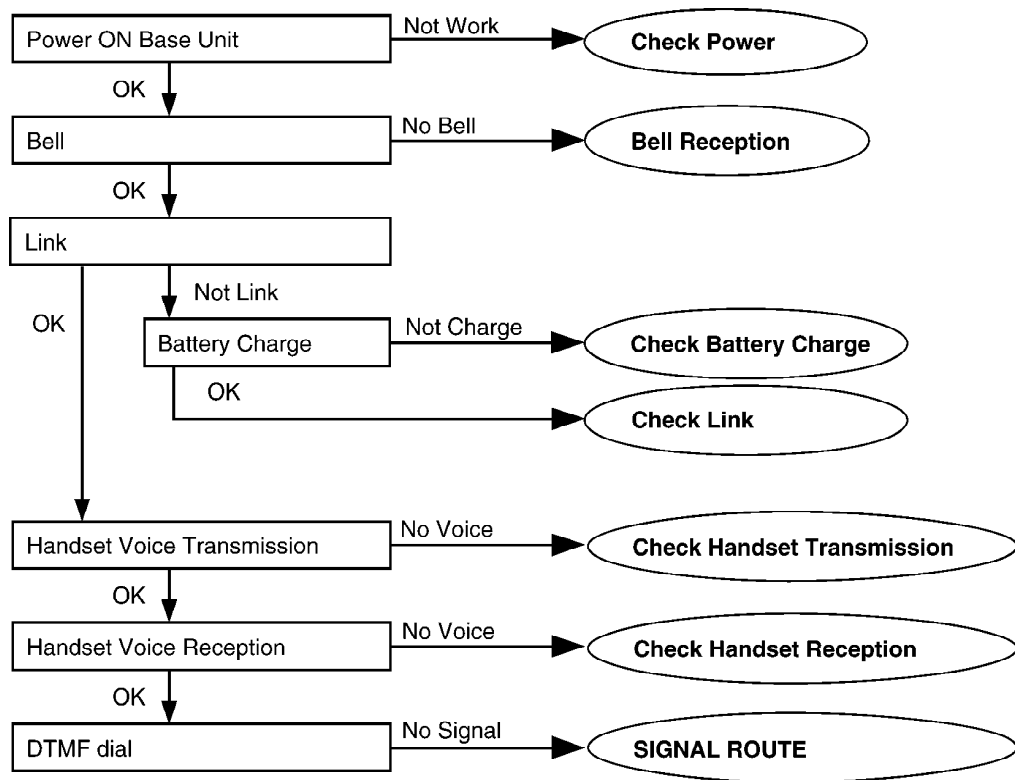
Cross Reference:
Check Power ()
Bell Reception ()
Check Battery Charge ()
Check Link ()
Check Handset Transmission ()
Check Handset Reception ()
SIGNAL ROUTE ()

11.1. Check Power

11.1.1. Base Unit

Is the AC Adaptor inserted into AC outlet? (Check AC Adaptor's specification.)

Is input of Q9 about 5.5V? —NO→ Check D4 is not opened, C40 is not shorted. —YES→ Check AC Adaptor.

YES ↓

Is the output voltage of Q9 about 4 V? —NO→ Check **Power Supply Circuit**.

YES ↓

Is the Collector of Q8 about 2.65 V? —NO→ Check **Power Supply Circuit**.

YES ↓

Is BBIC (14) High? —NO→ Check BBIC.

YES ↓

Does BBIC (18) oscillate at 10.368 MHz? —NO→ Check X1, C32, C33.

YES ↓
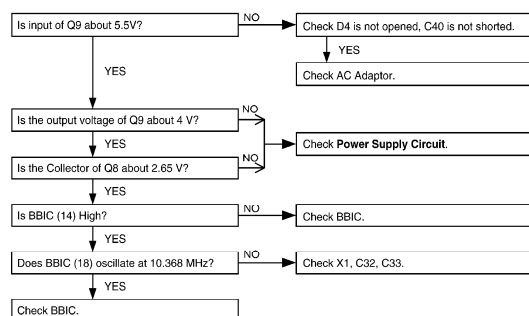
Check BBIC.

Cross Reference

Power Supply Circuit ()

Note:
BBIC is IC2.

11.1.2. Handset
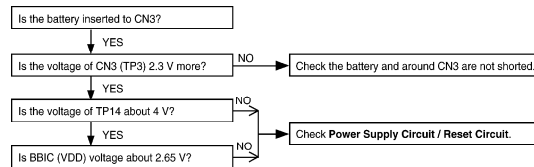
Cross Reference
Power Supply Circuit/Reset Circuit ()

Note:
BBIC is IC1.

11.2. Check Battery Charge

11.2.1. Base Unit
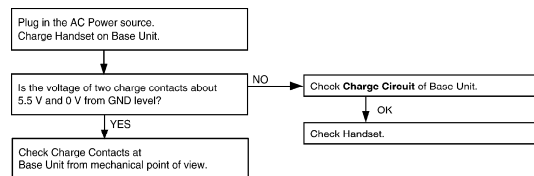
Cross Reference:
Charge Circuit ()

11.2.2. Handset
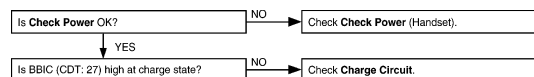
Cross Reference:
Check Power ()
Charge Circuit ()

Note:
BBIC is IC1.

11.2.3. Charger Unit
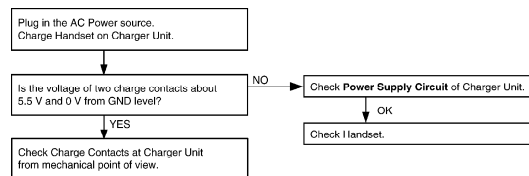
Cross Reference:
Power Supply Circuit ()

11.3. Check Link

11.3.1. Base Unit
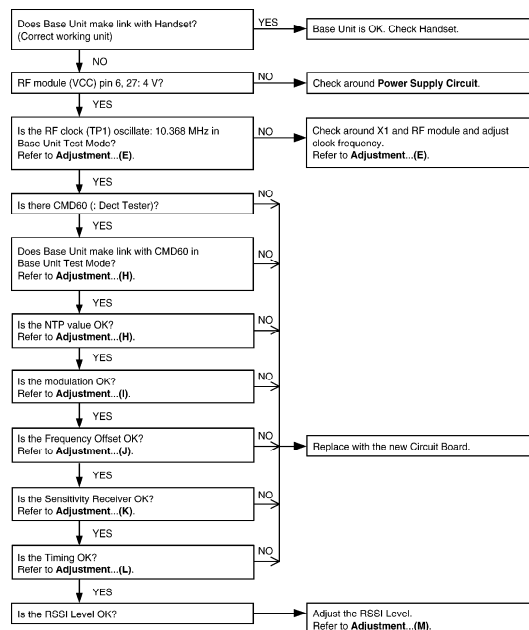
Cross Reference:
Power Supply Circuit ()
Adjustment (Base Unit) ()

11.3.2. Handset

| Does Handset make link with Base Unit? (Correct working unit) | YES → | Handset is OK. Check Base Unit. |

```
Does Handset make link with Base Unit?          YES
(Correct working unit)                      ─────────→  Handset is OK. Check Base Unit.
              │
              │ NO
              ▼
RF module (VCC) pin 6, 27: 4 V?                  NO
                                            ─────────→  Check around Power Supply Circuit.
              │ YES
              ▼
Is the RF clock (TP19) oscillate: 10.368 MHz    NO       Check around X1 and RF module and adjust
in Base Unit Test Mode?                     ─────────→   clock frequency.
Refer to Adjustment...(H).                               Refer to Adjustment...(H).
              │ YES
              ▼
Is there CMD60 (: Dect Tester)?                 NO ──┐
              │ YES                                  │
              ▼                                      │
Does Base Unit make link with CMD60 in          NO ─┤
Base Unit Test Mode?                                 │
Refer to Adjustment...(I).                           │
              │ YES                                  │
              ▼                                      │
Is the NTP value OK?                            NO ─┤
Refer to Adjustment...(I).                           │
              │ YES                                  │
              ▼                                      │
Is the modulation OK?                           NO ─┤
Refer to Adjustment...(J).                           │
              │ YES                                  │
              ▼                                      │
Is the Frequency Offset OK?                     NO ─┤→  Replace with the new Circuit Board.
Refer to Adjustment...(K).                           │
              │ YES                                  │
              ▼                                      │
Is the Sensitivity Receiver OK?                 NO ─┤
Refer to Adjustment...(L).                           │
              │ YES                                  │
              ▼                                      │
Is the Timing OK?                               NO ─┘
Refer to Adjustment...(M).
              │ YES
              ▼
Is the RSSI Level OK?                        ─────────→  Adjust the RSSI Level.
                                                         Refer to Adjustment...(N).
```

Cross Reference
Power Supply Circuit ()
Adjustment (Handset) ()

11.4. Check Handset Transmission

```
Check MIC of Handset.
         │
         │ OK
         ▼
Check CDL TX (HANDSET) in SIGNAL ROUTE.
```
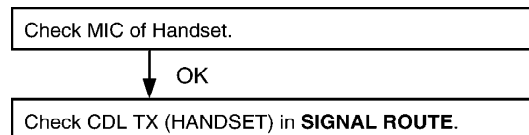
Cross Reference:
SIGNAL ROUTE ()

11.5. Check Handset Reception

```
Check Handset Speaker in
HOW TO CHECK THE SPEAKER.
         │
         │ OK
         ▼
Check CDL RX (HANDSET) in SIGNAL ROUTE.
```

Cross Reference:
HOW TO CHECK THE HANDSET SPEAKER ().
SIGNAL ROUTE ()

11.6. Check Caller ID

> Check Caller ID in **SIGNAL ROUTE**.

Cross Reference:
SIGNAL ROUTE ()

11.7. Bell Reception

11.7.1. Base Unit

When bell signal coming, is there bell signal at BBIC (26, 27)?	NO →	Check around R1 – R6, R29, R30, C3, C4.
↓ YES		
When bell signal coming, is there bell HINGEH signal at BBIC (44)?	NO →	Check around BBIC.
↓ YES		
When bell signal coming, is bell RINGER switching on and off?	NO →	Check around RINGER, Q10, R68, R89.
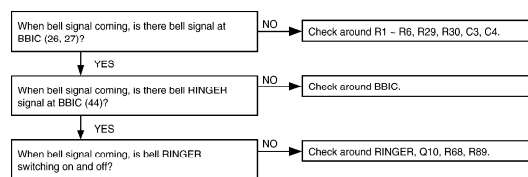
Note:
BBIC is IC2.

11.7.2. Handset

When bell signal coming, is there bell sound signal at BBIC (41, 42)?	NO →	Check link in **Check Link**, and around BBIC.
↓ YES		
When bell signal coming, is there bell sound signal at TP1, TP2?	NO →	Check around R17, R20, C67, C68, D6, D7.
↓ YES		
Does bell sound from RECEIVER?	NO →	Replace with the new RECEIVER.
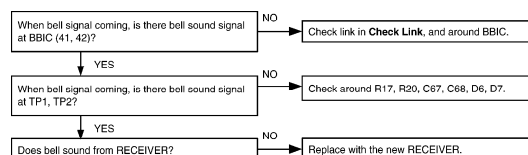
Cross Reference:
Telephone Line Interface ()
Check Link ()

Note:
BBIC is IC1.

12. CHECK PROCEDURE (BASE UNIT)

12.1. Preparation

12.1.1. Equipment Required
- DECT tester: Rohde & Schwarz, CMD 60 is recommended.

- **Frequency counter: it must be precise to be able to measure 1 Hz (precision; ±4 ppm).**
  Hewlett Packard, 53131 A is recommended.
- **DC power: it must be able to output at least 1 A current under 9 V.**
- **Digital multi-meter (DMM): it must be able to measure voltage and current.**
- **Oscilloscope**

12.1.2. JIGs and PC

- **EEPROM serial JIGs**
  1. I2C PCB: PQZZ1CD420BX
  2. RS232C cable: PQZZ1CD705BX
  3. Clip cable: PQZZ2CD705BX
  4. DC cable: PQZZ3CD705BX
- **PC which runs in DOS mode**
- **Batch file for setting: PQZZTCD430AL**

12.2. PC Setting

12.2.1. Connections

12.2.2. PC Setting

1. Open a window of MS-DOS mode from the start-up menu.

2. Change a directory to the one with "RTX_COM" contained.

3. Type "SET RTX_COM=1" from the keyboard (when COM port 1 is used for the connection).

4. Type "doskey".

Note:
See the table below for frequently used commands.

Command name	Function	Example
rdeeprom	Read the data of EEPROM	Type "rdeeprom 00 00 FF", and the data from address "00 00" to "FF" is read out.
readid	Read ID (RFPI)	Type "readid", and the registered ID is read out.
writeid	Write ID (RFPI)	Type "writeid 00 18 E0 0E 98", and the ID "0018 E0 0E 98" is written.
setfreq	adjust Frequency of RFIC	Type "setfreq nn nn".
hookoff	off-hook mode on Base	Type "hookoff".
hookon	on-hook mode on Base	Type "hookon".
Getchk	Read checksum	Type "getchk".
Wreeprom	write eeprom	Type "wreeprom 01 23 45". "01 23" is address and "45" is data to be written.
InitBsPIN.bat	Initial Base PIN to "0000"	Type "initBsPIN"

13. CHECK PROCEDURE (HANDSET)

13.1. Preparation

13.1.1. Equipment Required

- **DECT tester: Rohde & Schwarz, CMD 60 is recommended.**
- **Frequency counter: it must be precise to be able to measure 1 Hz (precision; ± 4 ppm).**
  Hewlett Packard, 53131 A is recommended.
- **DC power: it must be able to output at least 1 A current under 2.4 V for Handset, 9 V for JIG.**
- **Digital multi-meter (DMM): it must be able to measure voltage and current.**
- **Oscilloscope**

13.1.2. JIGs and PC

- **EEPROM serial JIGs**
  1. **I2C PCB: PQZZ1CD420BX**
  2. **RS232C cable: PQZZ1CD705BX**
  3. **Clip cable: PQZZ2CD705BX**
  4. **DC cable: PQZZ3CD705BX**
- **PC which runs in DOS mode.**
- **Batch file for PC setting: PQZZTCD430AL**

13.2. PC Setting

13.2.1. Connections

13.2.2. PC Setting

1. Open a window of MS-DOS mode from the start-up menu.

2. Change a directory to the one with "RTX_COM" contained.

3. Type "SET RTX_COM=1" from the keyboard (when COM port 1 is used for the connection).

4. Type "doskey".

Note:
See the table below for frequently used commands.

Command name	Function	Example
rdeeprom	Read the data of EEPROM	Type "rdeeprom 00 00 FF", and the data from address "00 00" to "FF" is read out.
readid	Read ID (RFPI)	Type "readid", and the registered ID is read out.
writeid	Write ID (RFPI)	Type "writeid 00 18 E0 0E 98", and the ID "0018 E0 0E 98" is written.
setfreq	adjust Frequency of RFIC	Type "setfreq nn nn".
Getchk	Read checksum	Type "getchk".
Wreeprom	write eeprom	Type "wreeprom 01 23 45". "01 23" is address and "45" is data to be written.

14. ADJUSTMENTS (BASE UNIT AND CHARGER UNIT)

If your unit have below symptoms, adjust or confirm each item using remedy column from the table.

Symptom	Remedy*
The base unit does not respond to a call from handset.	Make adjustments in item (I)~(M)
The base unit does not transmit or the transmit frequency is off.	Make adjustments in item (H)~(J), (L)
The transmit frequency is off.	Make confirmation in item (H)~(J), (L)
The transmit power output is low, and the operating distance between base unit and handset is less than normal.	Make confirmation in item
The reception sensitivity of base unit is low with noise.	Make confirmation in item
The transmit level is high or low.	Make adjustments in item
The reception level is high or low.	Make adjustments in item
The unit does not link.	Make confirmation in item
The unit cannot charge.	Make confirmation in item

* : Refer to Adjustment (Base Unit) ()

14.1. Adjustment (Base Unit)

Please follow the items below when BBIC or EEPROM are replaced.

	Items	Adjustment Point	Procedure	
(A)	2.65 V Supply Confirmation	-	1. Confirm that the voltage between TP187 and GND is 2.65 V ± 0.2 V.	IC C2 D C

	Items	Adjustment Point	Procedure	
(B)	**4.0 V Supply Confirmation**	-	**1. Confirm that the voltage between TP91 and GND is 4.0 V ± 0.2 V.**	D C C
(C)	**VBACK Status Confirmation**	-	**1. Confirm that the voltage between J102 and GND is 0 V ± 0.4 V.**	I(C D C
(D) *	**BBIC Confirmation**	-	**1. BBIC Confirmation (Execute the command "getchk").** **2. Confirm the returned checksum value.** **Connection of checksum value and program number is shown below.** ex.) <table><tr><td>checksum value</td><td>program number</td></tr><tr><td>4604</td><td>D441ZA</td></tr></table>	I(
(E) *	**BBIC Clock Adjustment (Important)**	TP1	**1. Execute the command "deactmac".** **2. Execute the command "conttx".** **3. Input Command "rdeeprom 00 00 02", then you can confirm the current value.** **4. Adjust the frequency of TP1 executing the command "setfreq 00 xx (where xx is the value)" so that the reading of the frequency counter is 10.368000 MHz ± 10 Hz.**	I C
(F) *	**Hookswitch Check with DC Characteristics**	-	**1. Connect J1 (Telephone Socket) to Tel-simulator which is connected with 600 Ω.** **2. Set line voltage to 48 V at on-hook condition and line current to 40 mA at off-hook condition of nomal telephone.** **3. Execute the command "hookoff"** **4. Confirm that the line current is 40 mA ± 5 mA.** **5. Execute the command "hookon".** **6. Confirm that the line current is 0 mA + 2 mA.**	I(R (

	Items	Adjustment Point	Procedure	
(G) *	DTMF Generator Confirmation	-	1. Connect J1 (Telephone Socket) to DTMF tester. 2. Execute the command "hookoff" and "dtmf_up". 3. Confirm that the high frequency (1477.06 Hz) group is -8 ± 2 dBm. 4. Execute the command "dtmf_lo". 5. Confirm that the low frequency (852.05 Hz) group is -10 ± 2 dBm.	IC C R1 C F
(H) *	Transmitted Power Confirmation	-	**Remove the Antenna before starting steps from 1 to 4.** 1. Configure the DECT tester (CMD60) as follows; <Setting> -Test mode: FP -Traffic Channel: 5 -Traffic Slot: 4 -Mode: Loopback -PMID: 00000 2. Execute the command "testmode". 3. Initiate connection from DECT tester. ("set up connect") 4. Confirm that the NTP value at ANT is 20 dBm ~ 25 dBm.	I C7 C6 DA R7

	Items	Adjustment Point	Procedure	
(I)	Modulation Check and Adjustment	ANT	Follow steps 1 to 3 of (H) above. 4. Confirm that the B-Field Modulation is 340 kHz/div ~ 402 kHz/div using data type Fig31. 5. Adjust the B-Field Modulation if required. (Execute the command "readmod" and "wrtmod xx", where xx is the value.)	I C7 C6 DA R7
(J)	Frequency Offset Confirmation	-	Follow steps 1 to 3 of (H) above. 4. Confirm that the frequency offset is -50 kHz ~ +50 kHz.	I C7 C6 DA R7

	Items	Adjustment Point	Procedure	
(K)	Sensitivity Receiver Confirmation	-	Follow steps 1 to 3 of (H) above. 4. Set DECT tester power to -88 dBm. 5. Confirm that the BER is < 1000 ppm.	
(L)	Timing Confirmation	-	Follow steps 1 to 3 of (H) above. 4. Confirm that the Timing accuracy is < ± 2.0 ppm.	

	Items	Adjustment Point	Procedure	
(M) *	**RSSI Level Confirmation**	**-**	**Follow steps 1 to 3 of (H) above.** **4. Set DECT tester power to -88 dBm.** **5. Execute the command "readrssi".** **6. Confirm: 25 < returned value < 43 (hex) (0x34 ± F (hex))**	I C7 C6 DA R7
(N) *	**Receive Audio Check and Adjustment**	**ANT J1**	1. Configure the DECT tester (CMD60) as follows; <Setting> -Test mode: FP -Mode: Normal -PMID: 00000 2. Execute the command "testmode". 3. Initiate connection from DECT tester. 4. Execute the command "hookoff". 5. Execute the command "openau". 6. Connect J1 (Telephone Socket) to Tel-simulator which is connected with 600 Ω. 7. Set line voltage to 48 V and line current to 40 mA. 8. Connect DECT tester to Tel-simulator. 9. Input audio signal (200 mVrms/1 kHz tone) to Tel-simulator. <DECT tester setting> -Scramble: On -AF Gen. to ADPCM: Off -AF Meter Input: ADPCM -AF Gen. Frequency: 1000 Hz -AF Gen. Level: 200 mVrms 10. Confirm hearing tone: 330 mVrms ± 100 mVrms 11. Adjust audio level if required. (Make sure current value using "getmicgain". And then execute the command "setmicgain xx", where xx is the value.) 12. Confirm that the B-field audio distortion with DECT tester is < 5 %.	IC R F I L C4 C I R6 C5

	Items	Adjustment Point	Procedure	
(O) *	Transmit Audio Check and Adjustment	ANT J1	1. Configure the DECT tester (CMD60) as follows; <Setting> -Test mode: FP -Mode: Normal -PMID: 00000 2. Execute the command "testmode". 3. Initiate connection from DECT tester. 4. Execute the command "hookoff". 5. Execute the command "openau". 6. Connect J1 (Telephone Socket) to Tel-simulator which is connected with 600 Ω. 7. Set line voltage to 48 V and line current to 40 mA. 8. Input audio signal (30 mVrms/1 kHz tone) to DECT tester. <DECT tester setting> -Scramble: On -AF Gen. to ADPCM: On -AF Meter Input: AF Voltm -AF Gen. Frequency: 1000 Hz -AF Gen. Level: 30 mVrms 9. Confirm hearing tone: 300 mVrms ± 100 mVrms. 10. Adjust audio level if required. (Make sure current value using "getspkrgain". And then execute the command "setspkrgain xx", where xx is the value.) 11. Confirm that the audio distortion at 600R of Tel-simulator is < 5 %.	IC C1 R1 C R R C7 C6 L C5
(P)	Charging Check	-	1. Connect Charge Contact 12 Ω/2 W resistor between charge+ and charge-. 2. Measure and confirm voltage across the resistor is 2.3 V ± 0.2 V.	D

Note:
After the measuring, sock up the solder of TP.
* : PC Setting () is required beforehand.
The connection of adjustment equipment are as shown in Adjustment Standard (Base Unit) ().

14.2. Adjustment Standard (Base Unit)

When connecting the Simulator Equipments for checking, please refer to below.

14.2.1. Component View

Note:
(H) - (M) is referred to ADJUSTMENTS (BASE UNIT AND CHARGER UNIT) ()

14.2.2. Flow Solder Side View

Note:
(A) - (P) is referred to ADJUSTMENTS (BASE UNIT AND CHARGER UNIT) ()

14.3. Adjustment (Charger Unit)

	Items	Adjustment Point	Procedure	
(A)	Charging Check	-	1. Connect Charge Contact 12 Ω/2 W resistor between charge+ and charge-. 2. Measure and confirm voltage across the resistor is 2.7V ± 0.2V.	

Note:
After the measuring, sock up the solder of TP.
The connection of adjustment equipment are as shown in Adjustment Standard (Charger Unit) ().

14.4. Adjustment Standard (Charger Unit)

When connecting the Simulator Equipments for checking, please refer to below.

14.4.1. Flow Solder Side View

Note:
(A) is referred to ADJUSTMENTS (BASE UNIT AND CHARGER UNIT) ()

15. ADJUSTMENTS (HANDSET)

If your unit have below symptoms, adjust or confirm each item using remedy column from the table.

Symptom	Remedy*
The movement of Battery Low indicator is wrong.	Make confirmation in item (F)~(G)
The handset does not respond to a call from base unit.	Make adjustments in item (H), (J)~(N)
The handset does not transmit or the transmit frequency is off.	Make adjustments in item (H)~(K), (M)
The transmit frequency is off.	Make confirmation in item (H)~(K), (M)
The transmit power output is low, and the operating distance between base unit and handset is less than normal.	Make confirmation in item
The reception sensitivity of base unit is low with noise.	Make confirmation in item
Does not link between base unit and handset.	Make confirmation in item (H)~(N)
The reception level is high or low.	Make adjustments in item
The transmit level is high or low.	Make adjustments in item

* : Refer to Adjustment (Handset)** ()**

15.1. Adjustment (Handset)

Please follow the items below when BBIC or EEPROM are replaced.

	Items	Procedure	Cl R
(A)	4.0 V Supply Confirmation	1. Confirm that the consumption current is < 200 mA, that is, there is no short circuit. 2. Confirm that the voltage between TP4V and GND is 4.1 V ± 0.2 V.	IC1 R4, D1, C14 R2, C26
(B)	VBACK Status Confirmation	1. Confirm that the voltage between TPVBACK and GND is 0 V ± 0.4 V.	IC1 R4, D1, C14 R2, C26 C

	Items	Procedure	CI R
(C)	BBIC Confirmation	1. BBIC Confirmation (Execute the command "getchk"). 2. Confirm the returned checksum value. **Connection of checksum value and program number is shown below.** ex.) <table><tr><td>checksum value</td><td>program number</td></tr><tr><td>6940</td><td>D452ZA</td></tr><tr><td>264D</td><td>D452ZB</td></tr></table>	IC1
(D)	Charge Control Check & Charge Current Monitor Confirmation	1. Apply 6V between TPCHG(+) and TPCHG(-) with current limit of PSU to 250 mA. 2. Confirm that the charge current is ON/OFF. 3. SW to decrease current limit of PSU to 100 mA. 4. Confirm that the charge current is stable.	IC1 L5 R6, C26 F
(E) *	Charge Detection (OFF) Confirmation	1. Stop supplying 6 V to TPCHG(+) and TPCHG(-). 2. Execute the command "charge". 3. Confirm that the returned value is 0x00 (hex).	IC1 L5 R6, C26 F
(F) *	Battery Monitor Confirmation & Adjustment (Important)	1. Apply 2.3 V ± 0.005 V between TP BATT(+) and TP BATT(-) with DC power. 2. Execute the command "deactmac" to stabilize the value. 3. Then, execute the command "readbatt".The returned value is XX. 4. Confirm that XX is between 98 and A8. 98 < XX < A8(Hex) (If XX is out of range,change BBIC)	IC1 L5 R6, C26 F
(G)	Battery low Confirmation (Important)	1. Apply 2.40 V between TP BATT(+) and TP BATT(-). 2. Confirm that there is no Speaker sound (Battery low alarm). 3. Apply 2.20 V between TP3(+) and TP4(-). 4. Confirm that there is Speaker sound (Battery low alarm).	IC1 R C12 R2 C1
(H) *	BBIC Clock Adjustment (Important)	1. Apply 2.6 V between TP BATT(+) and TP BATT(-) with DC power. 2. Execute the command "deactmac". 3. Execute the command "conttx". 4. Input Command "rdeeprom 00 01 01",then you can confirm the current value. 5. Adjust the frequency of TP19 executing the command "setfreq 00 xx (where xx is the value)". **so that the reading of the frequency counter is 10.368000 MHz ± 10 Hz.**	IC1 IC3

	Items	Procedure	Cl... R...
(I)*	Transmitted Power Confirmation	**Remove the Antenna before starting steps from 1 to 5.** 1. Configure the DECT tester(CMD60) as follows; <Setting> -Test mode: PP -RFPI: 0102030405 -Traffic Channel: 5 -Traffic Slot: 4 -Mode: Loopback 2. Execute the command "testmode". 3. Execute the command "regcmd60". 4. Initiate connection from DECT tester. 5. Confirm that the NTP value at A201 (TP15) is 20 dBm ~ 25 dBm	IC1, C(L3,(C! R23 C(
(J)	Modulation Check and Adjustment	Follow steps 1 to 4 of (I) above. 5. Confirm that the B-Field Modulation is 340 kHz/div ~ 402 kHz/div using data type Fig31. 6. Adjust the B-Field Modulation if required. (Execute the command "Readmod" and "Writemod xx", where xx is the value.)	IC1, C(L3,(C! R23 C(
(K)	Frequency Offset Confirmation	Follow steps 1 to 4 of (I) above. 5. Confirm that the frequency offset is -50 kHz ~ +50 kHz.	IC1, C(L3,(C! R23 C(
(L)	Sensitivity Receiver Confirmation	Follow steps 1 to 4 of (I) above. 5. Set DECT tester power to -88 dBm. 6. Confirm that the BER is < 1000 ppm.	IC1, C(L3,(C! R23 C(
(M)	Timing Confirmation	Follow steps 1 to 4 of (I) above. 5. Confirm that the Timing accuracy is < ± 2.0 ppm.	IC1, C(L3,(C! R23 C(

	Items	Procedure	Cl... R...
(N) *	RSSI Level Confirmation	Follow steps 1 to 4 of (I) above. **5. Set DECT tester power to -88 dBm.** **6. Execute the command "readrssi"** **7. Confirm: 25 < returned value < 43 (hex) (0x34 ± F (hex))**	IC1, C(L3,(C5 R23 C(
(O) *	Receive Audio Check and Confirmation	**1. Configure the DECT tester (CMD60) as follows;** **<Setting>** **-Test mode: PP** **-Mode: Normal** **-RFPI: 0102030405** **2. Execute the command "testmode".** **3. Execute the command "regcmd60"** **4. Initiate connection from DECT tester.** **5. Execute the command "openaudio".** **6. Confirm that the value of EEPROM address "F3F" is "02". (If the value is not "02 (by User)", set "02" and power off and power on, and return to clause 2.)** **7. Input audio signal (50 mVrms/1 kHz tone) from DECT tester.** **<DECT tester setting>** **-Scramble: On** **-AF Gen. to ADPCM: On** **-AF Meter Input: AF Voltm** **-AF Gen. Frequency: 1000 Hz** **-AF Gen. Level: 50 mVrms** **8. Confirm hearing tone: 300 mVrms ± 250 mVrms (Just check Audio path)** **9. Confirm that the audio distortion with DECT tester is < 5 %.**	IC1, R1 D7 C5 C60 C5 C62 C(C
(P)	Transmit Audio Check and Confirmation	**1. Configure the DECT tester (CMD60) as follows;** **<Setting>** **-Test mode: FP** **-Mode: Normal** **-RFPI: 0102030405** **2. Execute the command "testmode".** **3. Execute the command "regcmd60".** **4. Initiate connection from DECT tester.** **5. Execute the command "openaudio".** **6. Confirm that the value of EEPROM address "F3F" is "02". (If the value is not "02 (by User)", set "02" and power off and power on, and return to clause 2.)** **7. Input audio signal (30 mVrms/1 kHz tone) to DECT tester.** **<DECT tester setting>** **-Scramble: On** **-AF Gen. to ADPCM: Off** **-AF Meter Input: ADPCM** **-AF Gen. Frequency: 1000 Hz** **-AF Gen. Level: 30 mVrms** **8. Confirm hearing tone: 300 mVrms ± 250 mVrms (Just check Audio path)** **9. Confirm that the audio distortion with DECT tester is < 5 %.**	IC1 F C7 F IC3, C C57 C(R24 C

Note:

After the measuring, sock up the solder of TP.

* : PC Setting () is required beforehand.

The connection of adjustment equipment are as shown in **Adjustment Standard (Handset) ().**

15.2. Adjustment Standard (Handset)

When connecting the Simulator Equipment for checking, please refer to below.

Note:
(A) - (P) is referred to **ADJUSTMENTS (HANDSET) ()**

16. RF SPECIFICATION

16.1. Base Unit

Item	Value	Refer to -. *	Remar
TX Power	More than 20 dBm ~ 25 dBm	**Adjustment (Base Unit) (H)**	
Modulation	340 kHz/div ~ 402 kHz/div	**Adjustment (Base Unit) (I)**	Data type:
Frequency Offset	-50 kHz ~ +50 kHz	**Adjustment (Base Unit) (J)**	
RX Sensitivity	< 1000 ppm	**Adjustment (Base Unit) (K)**	
Timing Accuracy	< ± 2.0 ppm	**Adjustment (Base Unit) (L)**	
RSSI Level	0x34 hex ± F hex	**Adjustment (Base Unit) (M)**	

* : Refer to **Adjustment (Base Unit) ()**

16.2. Handset

Item	Value	Refer to -. **	Remar
TX Power	More than 20 dBm ~ 25 dBm	**Adjustment (Handset) (I)**	
Modulation	340 kHz/div ~ 402 kHz/div	**Adjustment (Handset) (J)**	Data type:
Frequency Offset	-50 kHz ~ +50 kHz	**Adjustment (Handset) (K)**	
RX Sensitivity	< 1000 ppm	**Adjustment (Handset) (L)**	
Timing Accuracy	< ± 2.0 ppm	**Adjustment (Handset) (M)**	
RSSI Level	0x34 hex ± F hex	**Adjustment (Handset) (N)**	

** : Refer to **Adjustment (Handset) ()**

17. HOW TO CHECK THE HANDSET SPEAKER

1. **Prepare the digital voltmeter, and set the selector knob to ohm meter.**

2. **Put the probes at the speaker terminals as shown below.**

```
┌─────────────────────────────────────────────┐
│ Is the value between                        │
│ (+) terminal and (−) terminal about 150Ω?   │
└─────────────────────────────────────────────┘
           │ YES              │ NO
           ▼                  ▼
      ┌─────────┐        ┌─────────┐
      │   OK    │        │   NG    │
      └─────────┘        └─────────┘
                              │
                              ▼
                    ┌──────────────────┐
                    │ Replace the new  │
                    │ speaker.         │
                    └──────────────────┘
```

Handset speaker

Digital Voltmeter
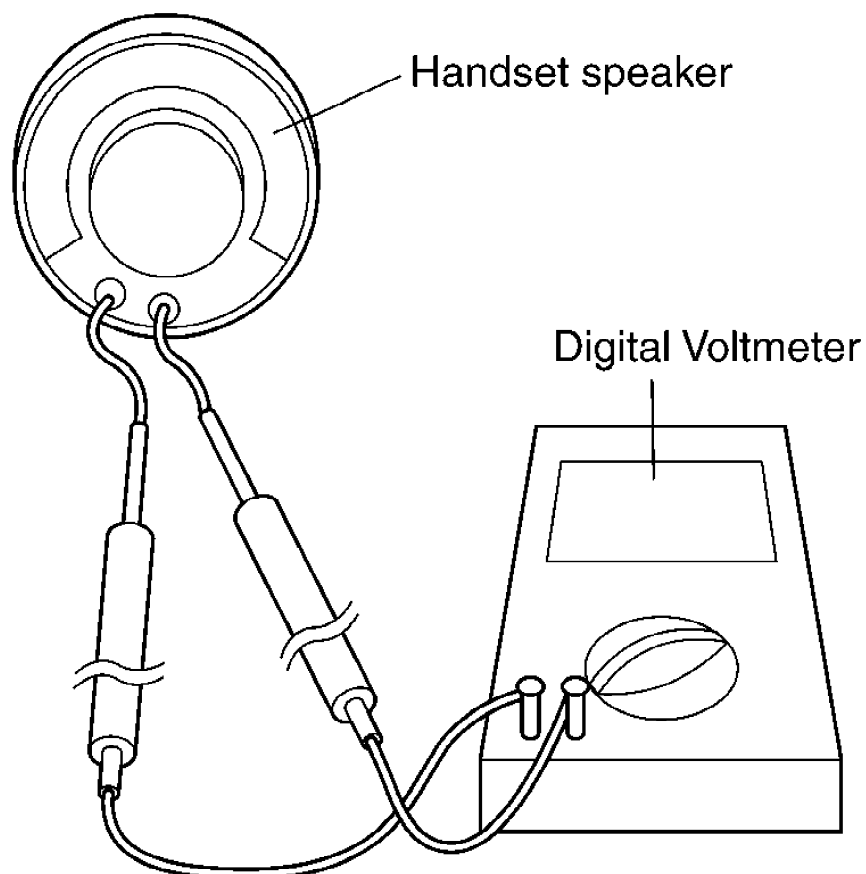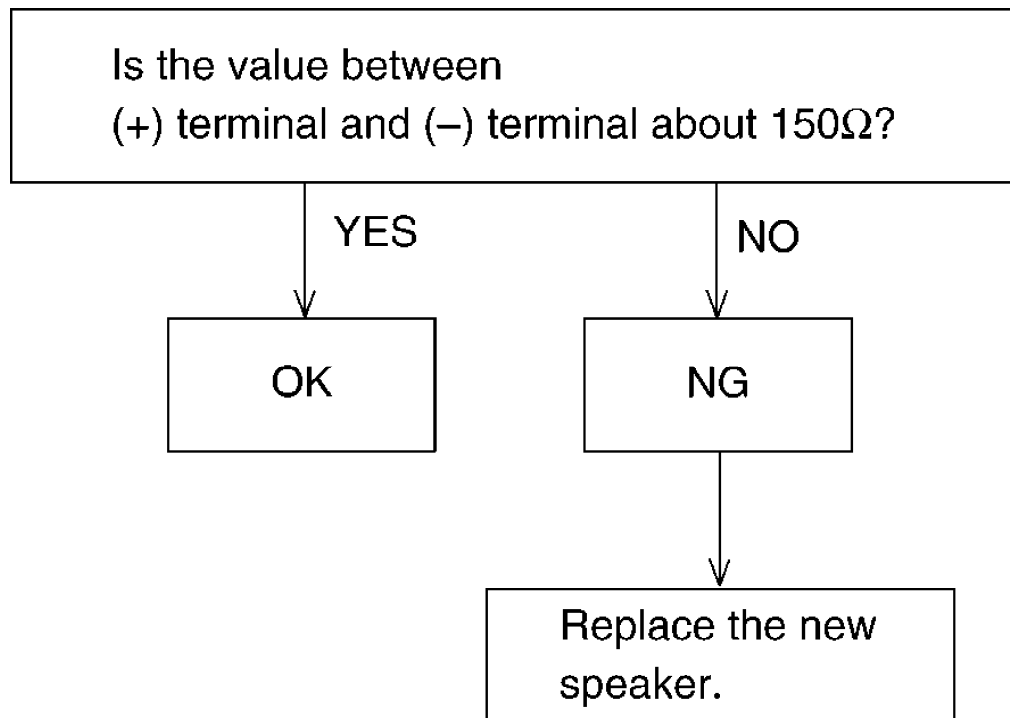
18. FREQUENCY TABLE (MHz)

Channel No	BASE UNIT		HANDSET	
	Transmit Frequency	Receive Frequency	Transmit Frequency	Receive Fr
1	1897.344	1897.344	1897.344	1897.3
2	1895.616	1895.616	1895.616	1895.6
3	1893.888	1893.888	1893.888	1893.8
4	1892.160	1892.160	1892.160	1892.1
5	1890.432	1890.432	1890.432	1890.4
6	1888.704	1888.704	1888.704	1888.7
7	1886.976	1886.976	1886.976	1886.9
8	1885.248	1885.248	1885.248	1885.2
9	1883.520	1883.520	1883.520	1883.5
10	1881.792	1881.792	1881.792	1881.7

Note:
Channel No. 10: In the Test Mode on Base Unit and Handset.

19. BLOCK DIAGRAM (BASE UNIT)

20. CIRCUIT OPERATION (BASE UNIT)

20.1. Outline

Base Unit consists of the following ICs as shown in BLOCK DIAGRAM (BASE UNIT) ().
- DECT BBIC (Base Band IC): IC2
- Handling all the audio, signal and data processing needed in a DECT base unit
- Controlling the DECT specific physical layer and radio section (Burst Module Controller section)
- ADPCM codec filter for speech encoding and speech decoding (DSP section)
- Echo-cancellation and Echo-suppression (DSP section)
- Any tones (tone, sidetone, ringing tone, etc.) generation (DSP section)
- DTMF receiver (DSP section)
- Clock Generation for RF Module
- ADC, DAC, timer, and power control circuitry
- All interfaces (ex: RF module, EEPROM, LED, Analog Front End, etc.)
- RF Module: IC3
- PLL Oscillator

- **Detector**
- **Compress/Expander**
- **First/Second Mixer**
- **Amplifier for transmission and reception**
- **EEPROM: IC1**
- **Temporary operating parameters (for RF, etc.)**
- **Additionally,**
- **Power Supply Circuit (+4.0V, +2.65V output)**
- **Crystal Circuit (10.368MHz)**
- **Charge Circuit**
- **Telephone Line Interface Circuit**

20.2. Power Supply Circuit

The power is supplied to the DECT BBIC, RF Module, EEPROM, Relay Coil, LED and Charge Contact from AC Adaptor (+6V) as shown in Fig.101. The power supply is as follows;

- **DECT BBIC (IC2): J2(+6V) → D4 → Q9 → D5 → Q8 → IC2**
- **RF Module (IC3): J2(+6V) → D4 → Q9 → IC3**
- **EEPROM (IC1): J2(+6V) → D4 → Q9 → D5 → Q8 → IC2 → IC1**
- **RINGER: J2(+6V) → D4 → Q9 → R68 → RINGER**
- **Charge Contact (TP84): J2(+6V) → D4 → R43, R44 → TP84**

<Fig.101>
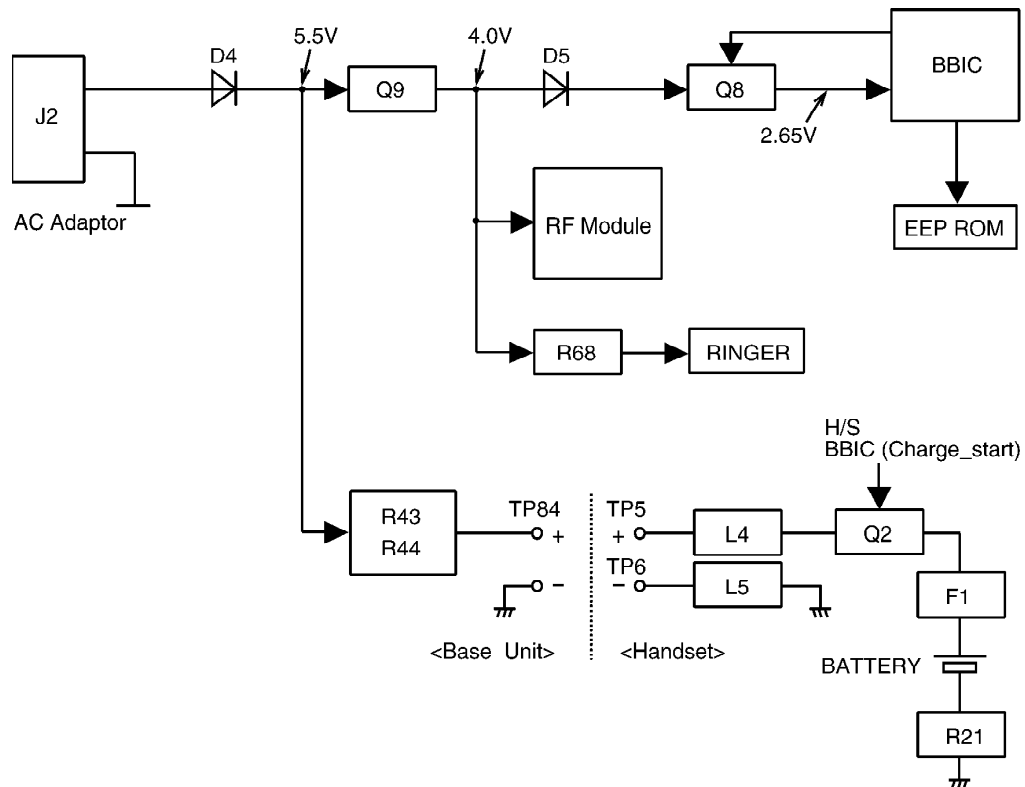
20.3. Telephone Line Interface

<Function>

- Bell signal detection
- Clip signal detection
- ON/OFF hook circuit
- Audio circuits

Bell&Clip (: Calling Line Identification Presentation: Caller ID) signal detection:
In the standby mode, Q2 is open to cut the DC loop current and decrease the ring load.
When ring voltage appears at the TP3 (A) and TP40 (B) leads (when the telephone rings), the
signal is transferred as follows;

- A → C4 → R2 → R29 → IC2 (DLP) [BELL&CLIP]
- B → C3 → R1 → R30 → IC2 (DLP) [BELL&CLIP]

ON/OFF hook circuit:
In the standby mode, Q2 is open, and connected as to cut the DC loop current and to cut the
voice signal. The unit is consequently in an off-hook condition.
When IC2 detects a ring signal or press the TALK Key onto the handset, Q3 turns on and then
Q2 turns on, thus providing an off-hook condition (active DC current flow through the circuit)
and the following signal flow is for the loop current.

- A → R77 → D2 → Q2 → R8 → Q3 → D2 → B [OFF HOOK]

Audio Circuits
Refer to SIGNAL ROUTE ()

20.4. Transmitter/Receiver

Base Unit and Handset mainly consist of RF Module and DECT BBIC.
Base Unit and Handset transmit/receive voice signal and data signal through the antenna on carrier frequency.

Signal Pass:
*Refer to SIGNAL ROUTE ().

20.4.1. Transmitter Block

The voice signal input from the TEL LINE interface goes to RF Module (IC3) through DECT BBIC (IC2) as shown in BLOCK DIAGRAM (BASE UNIT) ()
The voice signal passes through the analog part of IC2 where it is amplified and converted to a digital audio stream signal. The burst switch controller processes this stream performing encryption and scrambling, adding the various other fields to produce the GAP (Generic Access Profile) standard DECsT frame, assigning to a time slot and channel etc.
In IC3, the carrier frequency is changing, and frequency modulated RF signal is generated and amplified, and radiated from antenna. Handset detects the voice signal or data signal in the circuit same as the following explanation of Receiver Block.

20.4.2. Receiver Block

The signal of 1.9 GHz band (1.881792 GHz ~ 1.897344 GHz) which is input from antenna is input to IC3 as shown in BLOCK DIAGRAM (BASE UNIT) ().
In IC3, the signal of 1.9 GHz band is demoduleted, and goes to IC2 as GAP (Generic Access P rofile) standard DECT frames. It passes through the decoding section burst switch controller where it separates out the frame information and performs de-encryption and de-scrambling as required. It then goes to the DSP section where it is turned back into analog audio. This is amplified by the analog front end, and goes to the TEL LINE Interface.

21. BLOCK DIAGRAM (HANDSET)

22. CIRCUIT OPERATION (HANDSET)

22.1. Outline

Handset consists of the following ICs as shown in BLOCK DIAGRAM (HANDSET) ().
- DECT BBIC (Base Band IC): IC1

- **All data signals (forming/analyzing ACK or CMD signal)**
- **All interfaces (ex: Key, Detector Circuit, Charge, DC/DC Converter, EEPROM, LCD)**
- **RF Module: IC3**
- **PLL Oscillator**
- **Detector**
- **Compress/Expander**
- **Amplifier for transmission and reception**
- **EEPROM: IC2**
- **Temporary operating parameters (for RF, etc.)**

Note:
Refer to 28. EEPROM LAYOUT (HANDSET).

22.2. Power Supply Circuit/Reset Circuit

Circuit Operation:
When power on the Handset, the voltage is as follows;
BATTERY(2.2 V ~ 2.6V: TP3) → TP14(4V) → IC3(6, 27), D3 → IC1(37) → IC1(39, 63) (2.65V)
The Reset signal generates R19, C23 and 2.65V.

22.3. Charge Circuit

Circuit Operation:
When charging the handset on the Base Unit, the charge current is as follows;
DC+(5.5V ~ 6V) → D4 → R43, R44 → CHARGE+(Base) → CHARGE+(Handset) → L4 → Q2 → F1 → BATTERY+ ... Battery ... BATTERY- → R21 → GND → L5 → CHARGE-(Handset) → CHARGE-(Base) → GND → DC-(GND)
In this way, the BBIC on Handset detects the fact that the battery is charged.
The charge current is controlled by switching Q2 of Handset.
Refer to Fig.101 in Power Supply Circuit ().

22.4. Battery Low/Power Down Detector

Circuit Operation:
"Battery Low" and "Power Down" are detected by BBIC which check the voltage from battery.
The detected voltage is as follows;
- **Battery Low**

   Battery voltage: V(Batt) < 2.3V

   The BBIC detects this level and "▭" starts flashing and

"battery alarm" starts ringing.
- **Power Down**
   Battery voltage: V(Batt) < 2.2V
   The BBIC detects this level and power down.

23. CIRCUIT OPERATION (CHARGER UNIT)

23.1. Power Supply Circuit
The power supply is as shown.
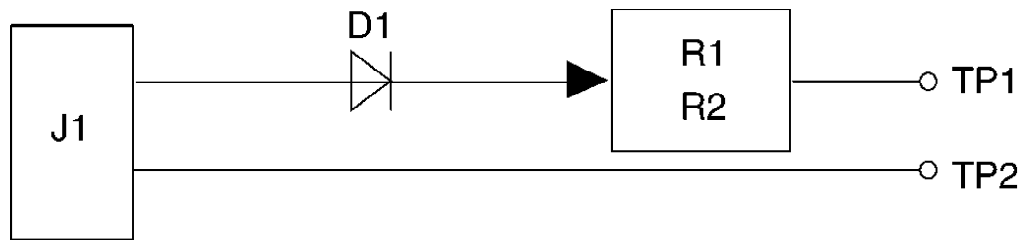
AC Adaptor

24. SIGNAL ROUTE

SIGNAL ROUTE	IN → SIGNAL ROUTE → OUT
DTMF TONE TEL OUT (to Tel Line)	(BASE UNIT) IC2(24) - R32 - R23 - C80 - C13 - Q6 - R12 - Q2 - D2 ⌐ R77 - A └ B
DTMF TONE TEL IN (from Tel Line)	(BASE UNIT) A - R77 ⌐ D2 - Q2 - R12 - R16 - C20 - R31 - IC2(28) B ┘
CDL TX (to Tel Line)	(HANDSET) MIC ⌐ C4 - R5 - IC1(45) ⌐ IC1(16) - IC3(4) - IC3(33) - ANTENNA to BASE UNIT └ R1 - C7 - R8 - IC1(46) ┘ (BASE UNIT) from HANDSET ⌐ A201 - C54 ⌐ DA1 - C57 - IC3(33) - IC3(20) - IC2(5) - IC2(24) - └ A202 - C86 - C58 ┘ R32 - R23 - C80 - C13 - Q6 - R12 - Q2 - D2 ⌐ R77 - A └ B
CDL RX (from Tel Line)	(BASE UNIT) A - R77 ⌐ D2 - Q2 - R12 - R16 - C20 - R31 - IC2(28) - IC2(9) - IC3(4) - IC3(33) - C57 - B ┘ DA1 ⌐ C54 - A201 to HANDSET └ C58 - C86 - A202 to HANDSET (HANDSET) from BASE UNIT - ANTENNA - IC3(33) - IC3(20) - IC1(12) ⌐ IC1(41) - R20 to SPEAKER(-) └ IC1(42) - R17 to SPEAKER(+)
Caller ID (from Tel Line)	(BASE UNIT) A - C4 - R2 - R29 - IC2(27) B - C3 - R1 - R30 - IC2(26)

25. CPU DATA (BASE UNIT)

25.1. IC2 (BBIC)

Pin	Description	I/O	Hi	Hi-z	Low	Remarks
1	VDD	-	-	-	-	-
2	VSS	-	-	-	-	-
3	PA_Driver_Amp	D.O	PA_ON	-	PA_OFF	-
4	TX/RX SW	D.O	TX	-	RX	-
5	RX_Data	D.I	Data	-	Data	-
6	PLL_Strobe	D.O	Latch	-	Normal	-
7	PLL_Data	D.O	Active	-	Active	-
8	PLL_Clk	D.O	Active	-	Active	-
9	TX_Data	D.O	Active	-	Active	-
10	(NO USE)	D.O	-	-	-	-
11	RF_System_Clk	D.O	Active	-	Active	-
12	VDD	-	-	-	-	-
13	VSS	-	-	-	-	-
14	RESETQ	A.I	Normal	-	Reset	-
15	VDDPM	D.O	-	-	-	-
16	VSSO	D.I	-	-	-	-
17	LOAD	A.I	-	-	-	-
18	XTAL	A.I	-	-	-	10.368 MHz
19	VDDLR	A.I	-	-	-	-
20	LRB	A.I	-	-	-	-
21	VDDA	-	-	-	-	-
22	VSSA	-	-	-	-	-
23	Audio_Out_N	A.O	-	-	-	-
24	Audio_Out_P	A.O	-	-	-	-
25	Bandgap_Ref	A.I	-	-	-	-
26	Differential_Line_P	A.I	-	-	-	for Bell Clip
27	Differential_Line_N	A.I	-	-	-	for Bell Clip
28	Audio_In_N	A.I	-	-	-	-
29	ADC_Ref	A.I	-	-	-	-
30	RSSI	A.I	-	-	-	-
31	AD2(MPCINP)	A.I	-	-	-	for Polarity
32	AD3	A.I	-	-	-	for Polarity
33	(NO USE)	D.I	(I_PU)	-	-	-
34	(NO USE)	D.I	(I_PU)	-	-	-
35	(NO USE)	D.I	(I_PU)	-	-	-
36	(NO USE)	D.I	(I_PU)	-	-	-
37	VDD	-	-	-	-	-
38	VSS	-	-	-	-	-
39	Supply_EEP	D.O	(Fixed)	-	-	-
40	Serial_Data(I2C)	D.I/O	Data	-	Data	-
41	Serial_Clk(I2C)	D.O	Active	-	Active	-
42	MODE	D.I	-	-	(Fixed)	-
43	(NO USE)	D.O	-	-	(Fixed)	-
44	BELL/PAGING	D.O	RINGER_ON	-	RINGER_OFF	-
45	VBACK	A.I	-	-	-	-

Pin	Description	I/O	Hi	Hi-z	Low	Remarks
46	(NO USE)	-	-	-	(I_PD)	-
47	(NO USE)	D.I	-	-	(Fixed)	-
48	VDD	-	-	-	-	-
49	(NO USE)	D.I	-	-	(Fixed)	-
50	(NO USE)	D.I	(Fixed)	-	-	-
51	(NO USE)	D.I	-	-	(Fixed)	-
52	(NO USE)	D.I	-	-	(Fixed)	-
53	VSS	-	-	-	-	-
54	VDD	-	-	-	-	-
55	KEY_IN	D.I	No Key	-	Key	-
56	(NO USE)	D.I/O	-	-	(I_PD)	-
57	Line Seizure	D.I/O	Q7_ON	-	Q7_OFF	-
58	(NO USE)	D.I/O	-	-	(I_PD)	-
59	(NO USE)	D.I/O	-	-	(I_PD)	-
60	(NO USE)	D.I/O	-	-	(I_PD)	-
61	HOOK_CTRL	D.O	Make	-	Break	-
62	(NO USE)	D.I/O	-	-	(I_PD)	-
63	ANT1	D.O	ANT1_ON	-	ANT1_OFF	-
64	ANT2	D.O	ANT2_ON	-	ANT2_OFF	-

Note:
I_PU; Internal Pull-Up, I_PD; Internal Pull-Down

26. CPU DATA (HANDSET)

26.1. IC1 (BBIC)

Pin	Description	I/O	Hi	Hi-z	Remarks
1	LCD_SEGMENT	D.O	Active	-	-
2	LCD_COMMON	D.O	Active	-	-
3	VDD	-	-	-	-
4	VSS	-	-	-	-
5	LCD_COMMON	D.O	Active	-	-
6	LCD_COMMON	D.O	Active	-	-
7	LCD_COMMON	D.O	Active	-	-
8	LCD_COMMON	D.O	Active	-	-
9	LCD_COMMON	D.O	Active	-	-
10	PA_SW	D.O	PA ON	-	-
11	T/R SW	D.O	Transmit	-	-
12	RX_DATA	D.I	Active	-	-
13	SYEN	D.O	Active	-	-
14	SYDA	D.O	Active	-	-
15	SYCL	D.O	Active	-	-
16	TX_DATA	A.O	Active	-	-
17	KEY_IN	D.I	No Key	-	-
18	KEY_IN	D.I	No Key	-	-
19	KEY_IN	D.I	No Key	-	-
20	KEY_IN	D.I	No Key	-	-
21	KEY_IN	D.I	No Key	-	-
22	(NO USE)	D.O	-	-	-
23	Reference clock	D.O	Active	-	-
24	VDD	-	-	-	-
25	VSS	-	-	-	-
26	POWER_SW	A.I	No Key	-	-
27	CHARGE_DET	A.I	Charge	-	-
28	DCDCDRV	D.O	Active	-	-
29	DCDCCMR	A.I	-	-	-
30	RESET	A.I	Normal	-	-
31	VSSO	-	-	-	-
32	LOAD	A.I	-	-	-
33	XTAL	A.I	-	-	-
34	VDDPM	A.O	-	-	-
35	VDDLO	A.O	-	-	-
36	VDDBAT	A.I	-	-	-
37	VDDLR	-	-	-	-
38	CHARGE_START	A.O	-	-	for charge
39	VDDA	-	-	-	-
40	VSSA	-	-	-	-
41	LSRN	A.O	-	-	-
42	LSRP	A.O	-	-	-
43	BANDGAP_REF	A.O	-	-	-
44	MICS	A.O	-	-	-
45	MICP	A.I	-	-	-

| 45 | MICP | A.r | - | - | - |

Pin	Description	I/O	Hi	Hi-z	Remarks
46	MICN	A.I	-	-	-
47	Reference Voltage	A.O	-	-	-
48	RSSI	A.I	-	-	-
49	P0.4	D.I	-	-	-
50	AD4N	A.I	-	-	-
51	AD4P	A.I	-	-	-
52	(NO USE)	D.I	-	-	-
53	KEY_STRB	D.O	Active	-	-
54	KEY_STRB	D.O	Active	-	-
55	KEY_STRB	D.O	Active	-	-
56	LCD_SEGMENT	D.O	Active	-	-
57	LCD_SEGMENT	D.O	Active	-	-
58	LCD_SEGMENT	D.O	Active	-	-
59	KEY_STRB	D.O	Active	-	-
60	KEY_STRB	D.O	Active	-	-
61	LCD_SEGMENT	D.O	Active	-	-
62	LCD_SEGMENT	D.O	Active	-	-
63	VDD	-	-	-	-
64	VSS	-	-	-	-
65	VDD for EEPROM	D.O	-	-	-
66	I2DAT	D.I/O	Active	-	-
67	I2CLK	D.I/O	Active	-	-
68	MODE	D.I	-	-	-
69	R2	D.I	-	-	-
70	(NO USE)	D.O	-	-	-
71	VBACK/P0.7	D.I	-	-	-
72	LCD_SEGMENT	D.O	Active	-	-
73	LCD_SEGMENT	D.O	Active	-	-
74	LCD_SEGMENT	D.O	Active	-	-
75	LCD_SEGMENT	D.O	Active	-	-
76	LCD_SEGMENT	D.O	Active	-	-
77	VDDLI	-	-	-	-
78	LCD_SEGMENT	D.O	Active	-	-
79	LCD_SEGMENT	D.O	Active	-	-
80	LCD_SEGMENT	D.O	Active	-	-
81	LCD_SEGMENT	D.O	Active	-	-
82	LCD_SEGMENT	D.O	Active	-	-
83	LCD_SEGMENT	D.O	Active	-	-
84	LCD_SEGMENT	D.O	Active	-	-
85	VSS	-	-	-	-
86	VDD	-	-	-	-
87	LCD_SEGMENT	D.O	Active	-	-
88	(NO USE)	D.O		-	-

Pin	Description	I/O	Hi	Hi-z	Remarks
89	Power Select	D.O	Low Power	-	-
90	LCD_SEGMENT	D.O	Active	-	-
91	LCD_SEGMENT	D.O	Active	-	-
92	LCD_SEGMENT	D.O	Active	-	-
93	LCD_SEGMENT	D.O	Active	-	-
94	LCD_SEGMENT	D.O	Active	-	-
95	LCD_SEGMENT	D.O	Active	-	-
96	LCD_SEGMENT	D.O	Active	-	-
97	LCD_SEGMENT	D.O	Active	-	-
98	LCD_SEGMENT	D.O	Active	-	-
99	LCD_SEGMENT	D.O	Active	-	-
100	LCD_SEGMENT	D.O	Active	-	-

27. EEPROM LAYOUT (BASE UNIT)

27.1. Scope

The purpose of this section is to describe the layout of the EEPROM (IC1) for the KX-TCD430 Base Unit.
The EEPROM contains hardware, software, and user specific parameters. Some parameters are set during production of the base e.g. crystal frequency adjustment at address 0000 and 0001, some are set by the user configuration e.g. ringer volume at address 0220, and some are set during normal use of the phone.

27.2. Introduction

The base unit uses a 32K bit serial EEPROM (IC1) for storing volatile parameters. All parameters are set up before the base leaves the factory. Some of these are vital for the operation of the hardware so a set of default parameters is programmed before the actual hardware fine-tuning can be initiated. This document lists all default settings with a short description.
In the tables below values in a range that are similar are not repeated; i.e. Address 00 to 01 contains the value 00 simply means that the value 00 is repeated in all addresses in the range.
All values in this document are in hexadecimal notation.

Type	Name	Description
D	default	The EEPROM location is preset to the Default value by the eeprom default
A	adjust	The EEPROM location is set during the production test and should not be overwritten. The value is set by the eeprom default loader only if the locati contains all 1's (byte: 0xFF, word FFFFh), i, e. it has never been set.
-		EEPROM location which is not set at all.

Country Setting	x	Default - no specific country setting, so revert to default value

27.3. EEPROM Layout

27.3.1. General Setup

Address	Default	Name	Country Setting	Type	Description
0000-01	00 60	EepromOscillator	x	A	Frequency adjustment
0002	0A	ModulationDeviation	x	A	Modulation adjustment
0020-0024	-	RFPI (ID for Base Unit)	x	A	RFPI
0025-0026	00 00	AC (Base PIN code)	x	D	AC code
0028	00	TBR22Test	x	D	TBR22 test
0030-0034	FF .. FF	IPUI_1 (ID for H/S 1)	x	D	Ipui for handset 1. If set to FF . (5bytes) the handset is not enrolled.
0035-0039	FF .. FF	IPUI_2 (ID for H/S 2)	x	D	Ipui for handset 2. If set to FF . (5bytes) the handset is not enrolled.
003A-003E	FF .. FF	IPUI_3 (ID for H/S 3)	x	D	Ipui for handset 3. If set to FF . (5bytes) the handset is not enrolled.
003F-0043	FF .. FF	IPUI_4 (ID for H/S 4)	x	D	Ipui for handset 4. If set to FF . (5bytes) the handset is not enrolled.
0044-0048	FF .. FF	IPUI_5 (ID for H/S 5)	x	D	Ipui for handset 5. If set to FF . (5bytes) the handset is not enrolled.
0049-004D	FF .. FF	IPUI_6 (ID for H/S 6)	x	D	Ipui for handset 6. If set to FF . (5bytes) the handset is not enrolled.
004E-008F	-	Reserved	x	-	Protocol data
0090-009F	-	UAK_1	x	-	UAK for handset 1 (for factory
00A0-00AF	-	UAK_2	x	-	UAK for handset 2 (for factory
00B0-00BF	-	UAK_3	x	-	UAK for handset 3 (for factory
00C0-00CF	-	UAK_4	x	-	UAK for handset 4 (for factory
00D0-00DF	-	UAK_5	x	-	UAK for handset 5 (for factory
00E0-00EF	-	UAK_6	x	-	UAK for handset 6 (for factory

27.3.2. Switch Control

Address	Default	Name	Country Setting	Type	Description
09F1	00	HsRegInfo.RegFlags	x	D	Handset registration info - registra OFF 1=reg, 0=no reg
09F2	00	HsRegInfo.EmcFlags	x	D	Handset registration info - EMC fla Bit 6..7: not used 0..5: handset 1..6 info, 1=known , (unknown
09F3	21	RingMode	x	D	Ring mode. Modes used in KAMM. 20h and 21h. Bit 7..5: Mode (001=group) 4 : Not used 3..0: Id (001= id of first group)

27.3.3. Flash Time setting

Address	Default	Name	Country Setting	Type	Description
0F0B	08	CalibBreakTime[0]	46	D	Calibrated loop-break time for s break Unit: 10 ms, defaults to 80 ms
0F0C	14	CalibBreakTime[1]	0A	D	Calibrated loop-break time for l Unit: 10 ms, defaults to 200 ms
0F0D	46	CalibBreakTime[2]	x	D	Calibrated loop-break time for e break Unit: 10 ms, defaults to 700 ms

27.3.4. Clip (Caller ID) configuration

Address	Default	Name	Country Setting	Type	Description
0F1C	70	Detect	x	D	CLIP detect configuration Bit 0-2: Mode: 0: Learn mode, 1: only, 2: FSK only, 3: Generic Russian CLIP only 3: Unused4 4: Onhook: 1=enable 0=disab 5: Offhook: 1=enable 0=disab 6: Msgwaiting: 1=enable 0=di 7: NoDtas: 1=enable 0=disabl
0F37..38	3D 00	Parse.Configuration	x	D	Clip parse set configuration Bit 0: Etsi: 1=enable 0=disable 1: ForwardNumber: 1=enable 2: Danish: 1=enable 0=disabl 3: Dutch: 1=enable 0=disable 4: Canadian: 1=enable 0=disa 5: Swedish: 1=enable 0=disab 6: UserDefined: 1=enable 0=d 7: KPN vmwi: 1=enable 0=dis 8: ProtocolPriority: If 2 mutually exclusive param occurs, the 1st in the protoco message has priority. 1=enable 0=disable 9: UseCallType: Verify the Call Type paramete available, when receiving Cal CLIP at busy subscriber. 1=enable 0=disable 10: AddTop0IfNo0 Automatic addition of 0 if top ID is not 0. 1=enable 0=disable 11: DtmfDigitsOnly Parse DTMF clip without star stop code. 1=enable 0=disable 12..15: Reserved12..Reserved

27.3.5. BsUiTask settings

Address	Default	Name	Country Setting	Type	Description
0F4B	03	Config1	x	D	BsUiTask configuration (MSB) Bits 1=enable 0=disable 0: AmPmClockSettingEnabled, 1: ClipDetectionSettingEnabled 2: AkzMenuEnabled, disabled 3: HakzMenuEnabled, disabled 4: RussianClipSettingEnabled, 5: SmscSendNumberSettingEn disabled 6: SMSPabxSupportSettingEna disabled 7: ARSDisablePossible, disable
0F4C	D7	Config2	03	D	BsUiTask configuration (LSB) Bits 1=enable 0=disable 0: FlashTime1Enabled, enabled 1: FlashTime2Enabled, enabled 2: FlashTime3Enabled, enabled 3: KeyClicksEnable, disabled 4: ARSCarrierMenuEnabled, en 5: ARSIntDeletionMenuEnabled 6: ARSMultipleCarrierMenuEna enabled 7: ARSMultipleAreaCodeMenuE enabled
0F4E	FF	Config2	x	D	BsUiTask configuration 2 Bits 1=enable 0=disable 0: RingerModeMenuEnabled, er 1: CallRestrictionMenuEnabled 2: CancelHandsetMenuEnabled 3: BaseToneMenusEnabled, en 4:ARSMenuEnabled, enabled 5:CallCostMenuEnabled, enable 6:BasePINMenuEnabled, enable 7:DialModeMenuEnabled, enab

28. EEPROM LAYOUT (HANDSET)

28.1. Scope

The purpose of this section is to describe "layout of the EEPROM (IC2) KX-A143 Handset".
The EEPROM contains hardware, software, and user specific parameters. Some parameters are
set during production of the handset e.g. crystal oscillator adjustment at 0000..01, some are set
by the user when configuring the handset e.g. ringer volume at 0F3E, and some during normal

use of the phone.

28.2. Introduction

The handset uses a 32k bit serial EEPROM (IC2) for storing volatile parameters. All parameters are set up before the handset the factory. Some of these are vital for the operation of the hardware so a set of default parameters is programmed before the actual hardware fine-tuning can be initiated. This document lists all default settings with a short description.
This document lists all default parameters with a short description.
In the tables below values in a range that are similar are not repeated; i.e. Address 00 to 01 contains the value 00 simply means that the value 00 is repeated in all addresses in the range.

Type	Name	Description
D	default	The EEPROM location is preset to the Default value by the eeprom defau loader.
A	adjust	The EEPROM location is set during the production test and should not b overwritten. The value is set by the eeprom default loader only if the loc contains 0xFF, i, e. it has never been set.
-		EEPROM location which is not set at all.

Country Setting	x	Default - no specific country setting, so revert to default value

28.3. EEPROM contents

28.3.1. General Setup

Address	Default	Name	Country Setting	Type	Description
0000-0001	00 60	EepromOscillator	-	A	Frequency adjustment
0002	0A	ModulationDeviation	-	A	Modulation adjustment
0030-0034	00	IPEI (ID for Handset)	-	A	IPEI
0036-003A	-	PARK_1 (ID for Base 1)	-	-	PARK for registration 1
003B-003F	-	PARK_2 (ID for Base 2)	-	-	PARK for registration 2
0040-0044	-	PARK_3 (ID for Base 3)	-	-	PARK for registration 3
0045-0049	-	PARK_4 (ID for Base 4)	-	-	PARK for registration 4
004A-004D	FF	PLI_1-PLI_4	-	D	Pli for registration 1-4. If set to FF registration is deleted.
0100-0104	-	RFPI_1 (Base 1)	-	-	RFPI for registration 1
0105	-	SerClass_1	-	-	Service class for registration 1
0106	-	LAL_1	-	-	Location area level for registration
0107	-	IPUI_LEN_1	-	-	IPUI length for registration 1
0108-0114	-	IPUI_1	-	-	IPUI for registration 1
0115	-	ZAP_1	-	-	ZAP for registration 1
0116	-	STATUS_1	-	-	Status for registration 1
0117-126	-	UAK_1	-	-	UAK for registration 1
0130-134	-	RFPI_2 (Base 2)	-	-	RFPI for registration 2
0135	-	SerClass_2	-	-	Service class for registration 2
0136	-	LAL_2	-	-	Location area level for registration
0137	-	IPUI_LEN_2	-	-	IPUI length for registration 2
0138-0144	-	IPUI_2	-	-	IPUI for registration 2
0145	-	ZAP_2	-	-	ZAP for registration 2
0146	-	STATUS_2	-	-	Status for registration 2
0147-0156	-	UAK_2	-	-	UAK for registration 2
0160-0164	-	RFPI_3 (Base 3)	-	-	RFPI for registration 3
0165	-	SerClass_3	-	-	Service class for registration 3
0166	-	LAL_3	-	-	Location area level for registration
0167	-	IPUI_LEN_3	-	-	IPUI length for registration 3
0168-0174	-	IPUI_3	-	-	IPUI for registration 3
0175	-	ZAP_3	-	-	ZAP for registration 3
0176	-	STATUS_3	-	-	Status for registration 3
0177-0186	-	UAK_3	-	-	UAK for registration 3
0190-0194	-	RFPI_4 (Base 4)	-	-	RFPI for registration 4
0195	-	SerClass_4	-	-	Service class for registration 4
0196	-	LAL_4	-	-	Location area level for registration
0197	-	IPUI_LEN_4	-	-	IPUI length for registration 4

Address	Default	Name	Country Setting	Type	Description
0198-01A4	-	IPUI_4	-	-	IPUI for registration 4
01A5	-	ZAP_4	-	-	ZAP for registration 4
01A6	-	STATUS_4	-	-	Status for registration 4
01A7-01B6	-	UAK_4	-	-	UAK for registration 4
0450-0451	00	HSPinCode	x	D	4 BCD Digits
0462	00	Language	x	D	00 = English 01 = Spanish 02 = French 03 = Italian 04 = Dutch 05 = Turkish 06 = Hungarian 07 = Portuguese 08 = Polish 09 = Unused 0A = German
0467	00	FactoryLanguageSetting	x	D	Factory setting for language: 00 = English 01 = Spanish 02 = French 03 = Italian 04 = Dutch 05 = Turkish 06 = Hungarian 07 = Portuguese 08 = Polish 09 = Unused 0A = German
0469	07	MaxDigitsToMatch	06	D	Valid values: 01 - FF Digits above this value will not be evaluated, when matching.
046A	05	MinDigitsToMatch	x	D	Valid values: 01 - FF (-Must be low MaxDigitsToMatch). -If all digits of one of the numbers completely, -with at least this number of digits a match. (-Or if they match completely with digits, we also have match.)

28.3.2. Battery Parameters

Address	Default	Name	Type	Description
0F04	9A	LowVoltage	A	Voltage on which to start battery l indication. The voltage has to be measured u value for 8 seconds before the handset star signaling low battery. LowVoltage[eeprom]=[ADC-steps] LowVoltage[mV](14.35[mV/step])

28.3.3. Default Audio-Parameters

Address	Default	Name	Country Setting	Type	Description
0F36	46	GR-offset for volumestep 1	x	D	Bit7: AOG Bit6: AOG2 Bit5, bit0: Gain-receive (values ra from 0x00 to 0x30, each step repr 1 dB)
0F37	5F	GR-offset for volumestep 2	x	A	Bit7: AOG Bit6: AOG2 Bit5, bit0: Gain-receive (values ra from 0x00 to 0x30, each step repr 1 dB)
0F38	00	GR-offset for volumestep 3	x	D	Bit7: AOG Bit6: AOG2 Bit5, bit0: Gain-receive offset to volumestep 2 (values ranging fro 0x30, each step representing 1 dE
0F3F	02	EEVoiceVolume	x	D	Volume of the earpiece

28.3.4. Menu Configuration

Address	Default	Name	Country Setting	Type	Description
0F53	FF	Menu Config	x	D	bit 0 - Registration menu on/off 1/(
					bit 1 - Select base menu on/off 1/0
					bit 2 - Internal ringer menu on/off
					bit 3 - Page ringer menu on/off 1/0
					bit 4 - Standby mode menu on/off
					bit 5 - Battery select menu on/off
					bit 6 - Call waiting menu on/off 1/(
					bit 7 - Clip list on/off 1/0
0F54	01	RecVolStoreEnabled	x	D	00: Receiver volume will be reset value when hooking on.
					01: Receiver volume will be store eeprom when set in conversation

29. HOW TO REPLACE FLAT PACKAGE IC

29.1. Preparation

- PbF (: Pb free) Solder

- Soldering Iron

  Tip Temperature of 700°F ± 20°F (370°C ± 10°C)

  Note: We recommend a 30 to 40 Watt soldering iron. An expert may be able to use a 60 to 80 Watt iron where someone with less experience could overheat and damage the PCB foil.

- Flux

  Recommended Flux: Specific Gravity → 0.82.

  Type → RMA (lower residue, non-cleaning type)

Note: See ABOUT LEAD FREE SOLDER (PbF: Pb free) ().

29.2. Procedure

1. Tack the flat pack IC to the PCB by temporarily soldering two diagonally opposite pins in the correct positions on the PCB.
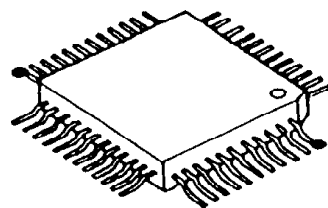
● – – – – – –Temporary soldering point.

Be certain each pin is located over the correct pad on the PCB.

2. Apply flux to all of the pins on the IC.

Flux
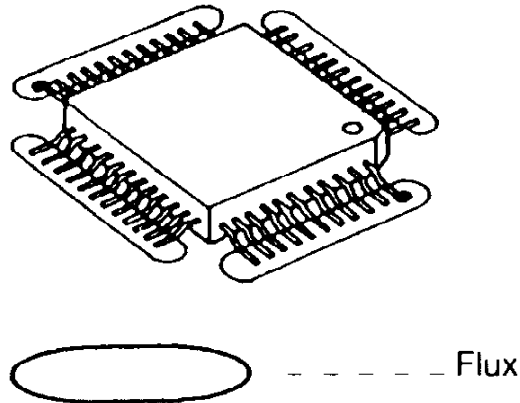
3. Being careful to not unsolder the tack points, slide the soldering iron along the tips of the pins while feeding enough solder to the tip so that it flows under the pins as they are heated.
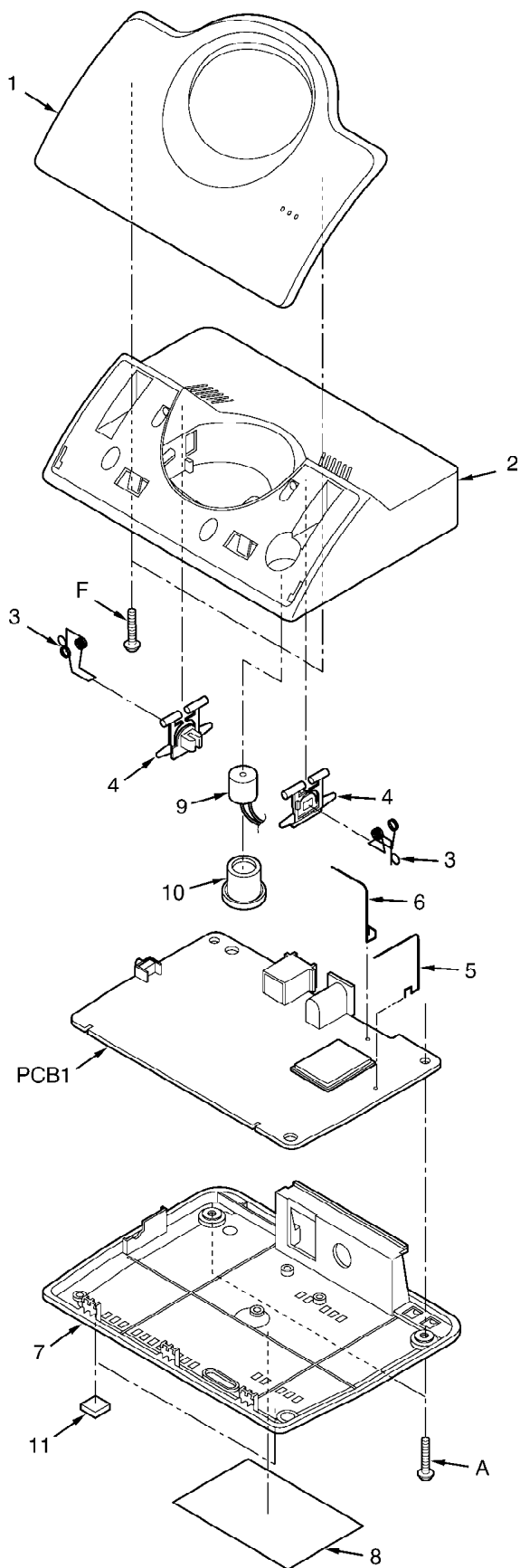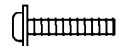
Soldering iron

Specified solder
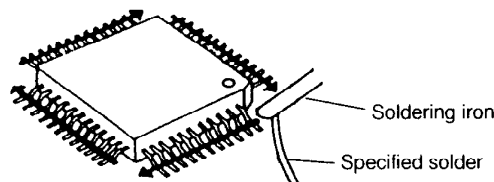
29.3. Modification Procedure of Bridge

1. Add a small amount of solder to the bridged pins.

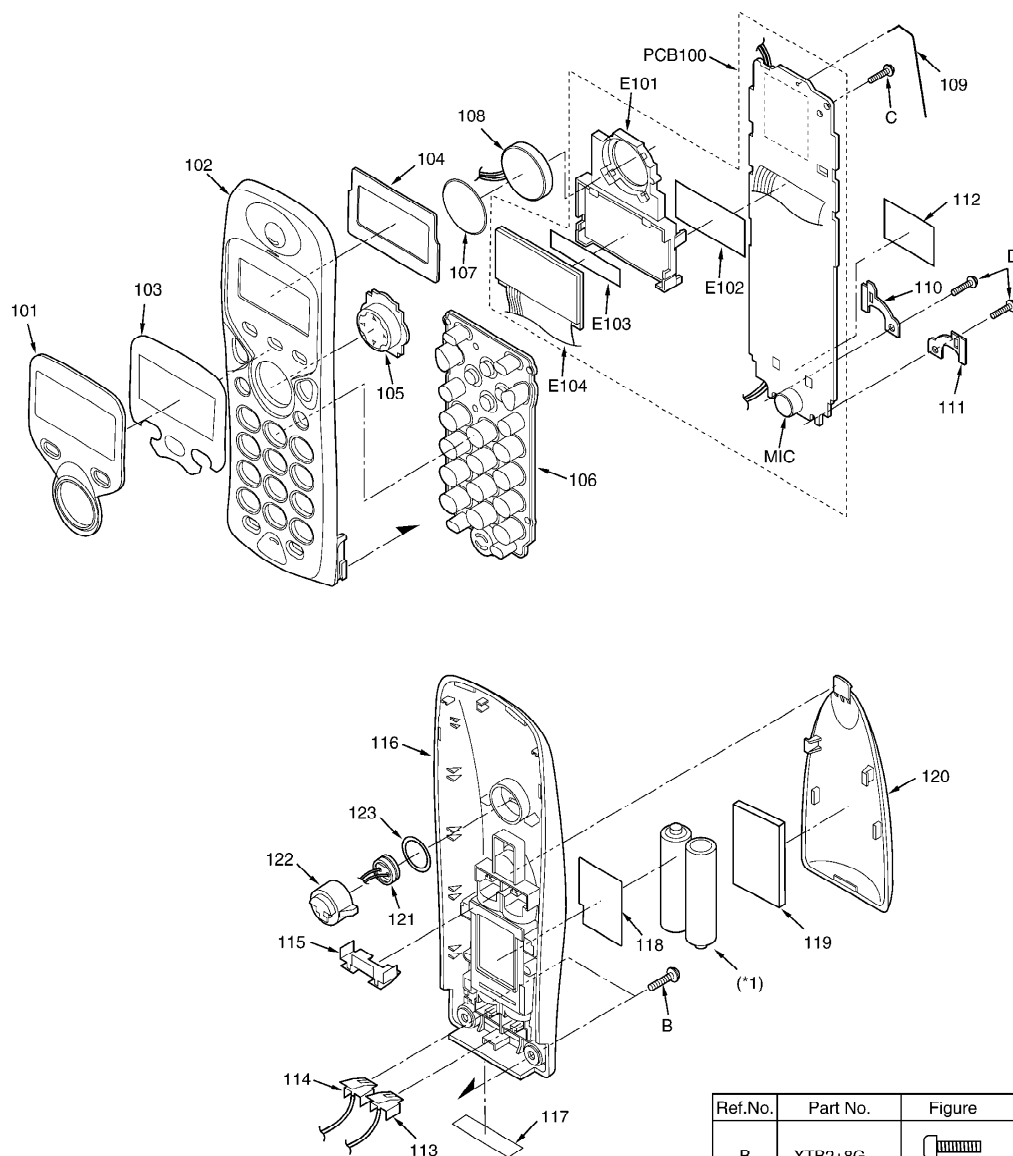## 2. With a hot iron, use a sweeping motion along the flat part of the pin to draw the solder from between the adjacent pads.

bridge
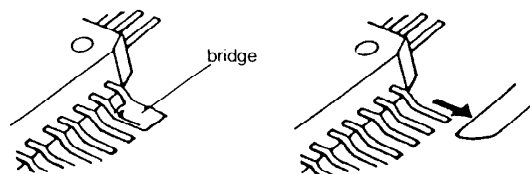
30. CABINET AND ELECTRICAL PARTS LOCATION (BASE UNIT)

Ref.No.	Part No.	Figure
A	XTW26+12P	$\phi 2.6 \times 12mm$
F	XTW26+12P	$\phi 2.6 \times 12mm$

31. CABINET AND ELECTRICAL PARTS LOCATION (HANDSET)

Ref.No.	Part No.	Figure
B	XTB2+8G	φ2×8mm
C	XTB2+8G	φ2×8mm
D	XTB2+8G	φ2×8mm
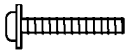
Note:
(*1) The rechargeable Ni-MH battery P03P and Ni-Cd battery P03H are available through sales route of Panasonic.
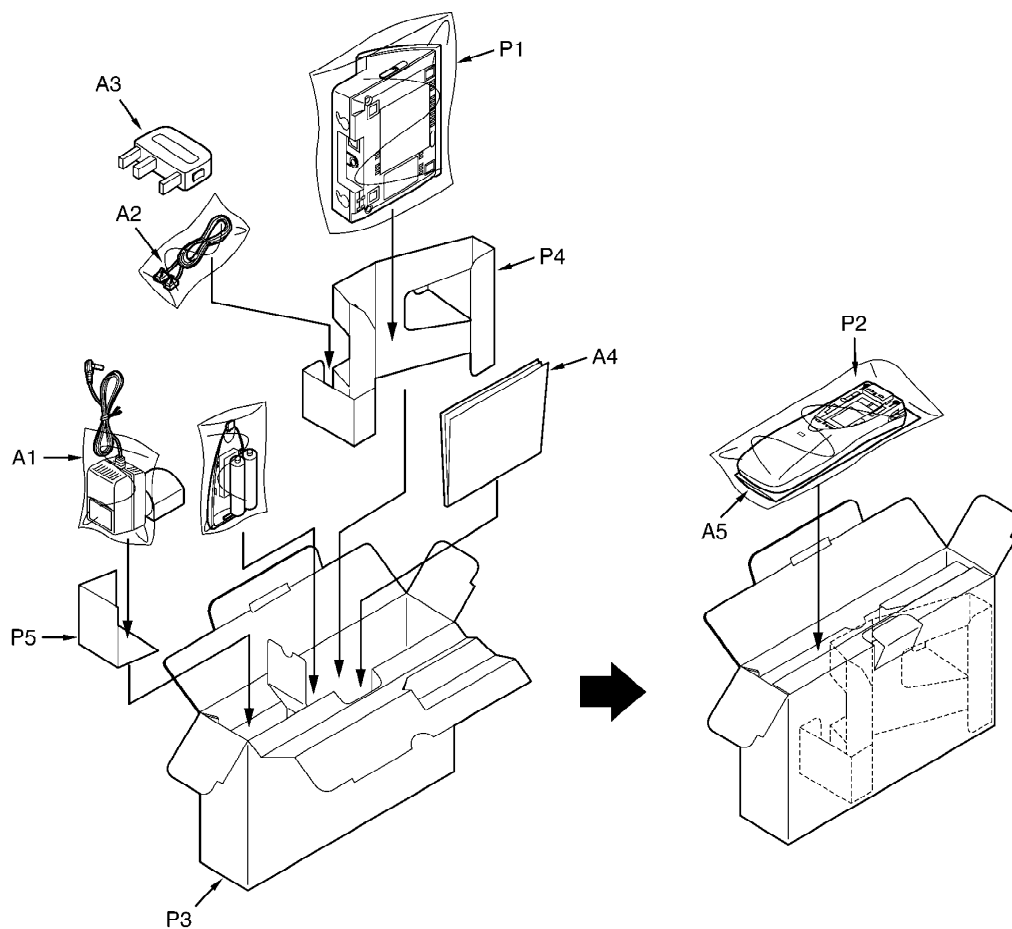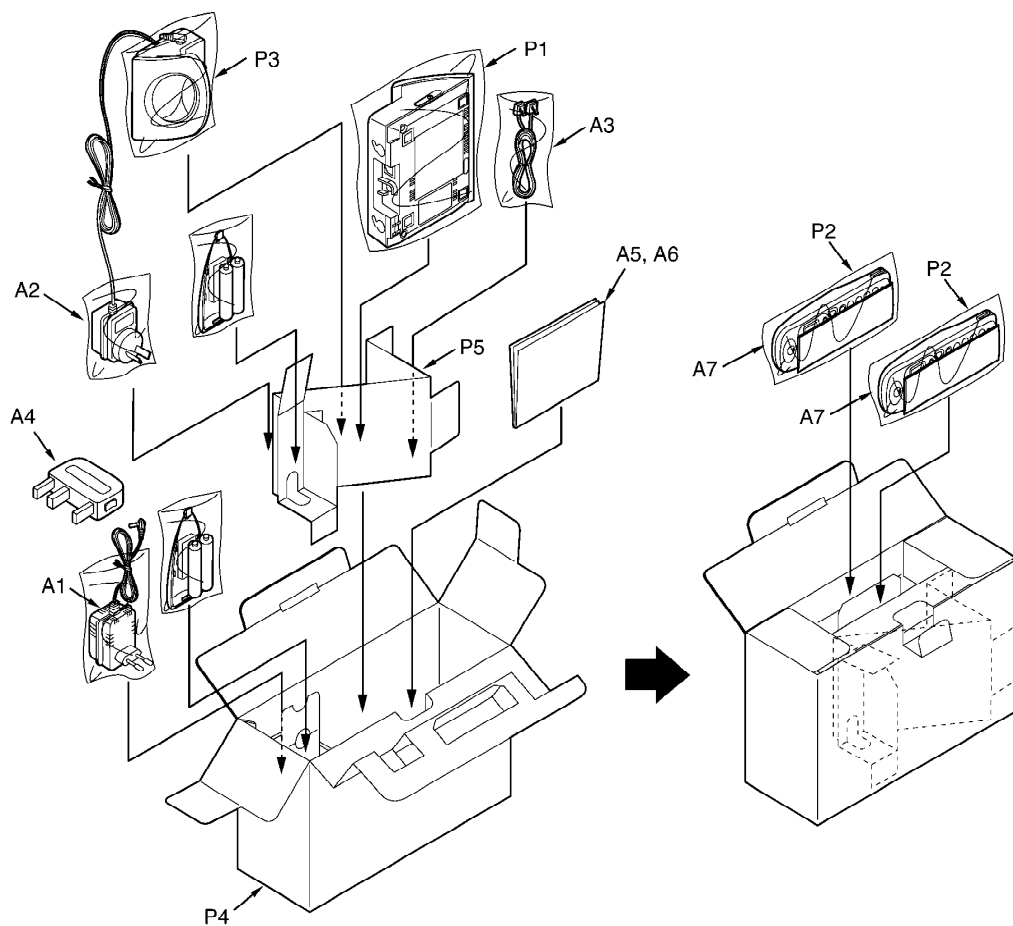
32. CABINET AND ELECTRICAL PARTS LOCATION

(CHARGER UNIT)
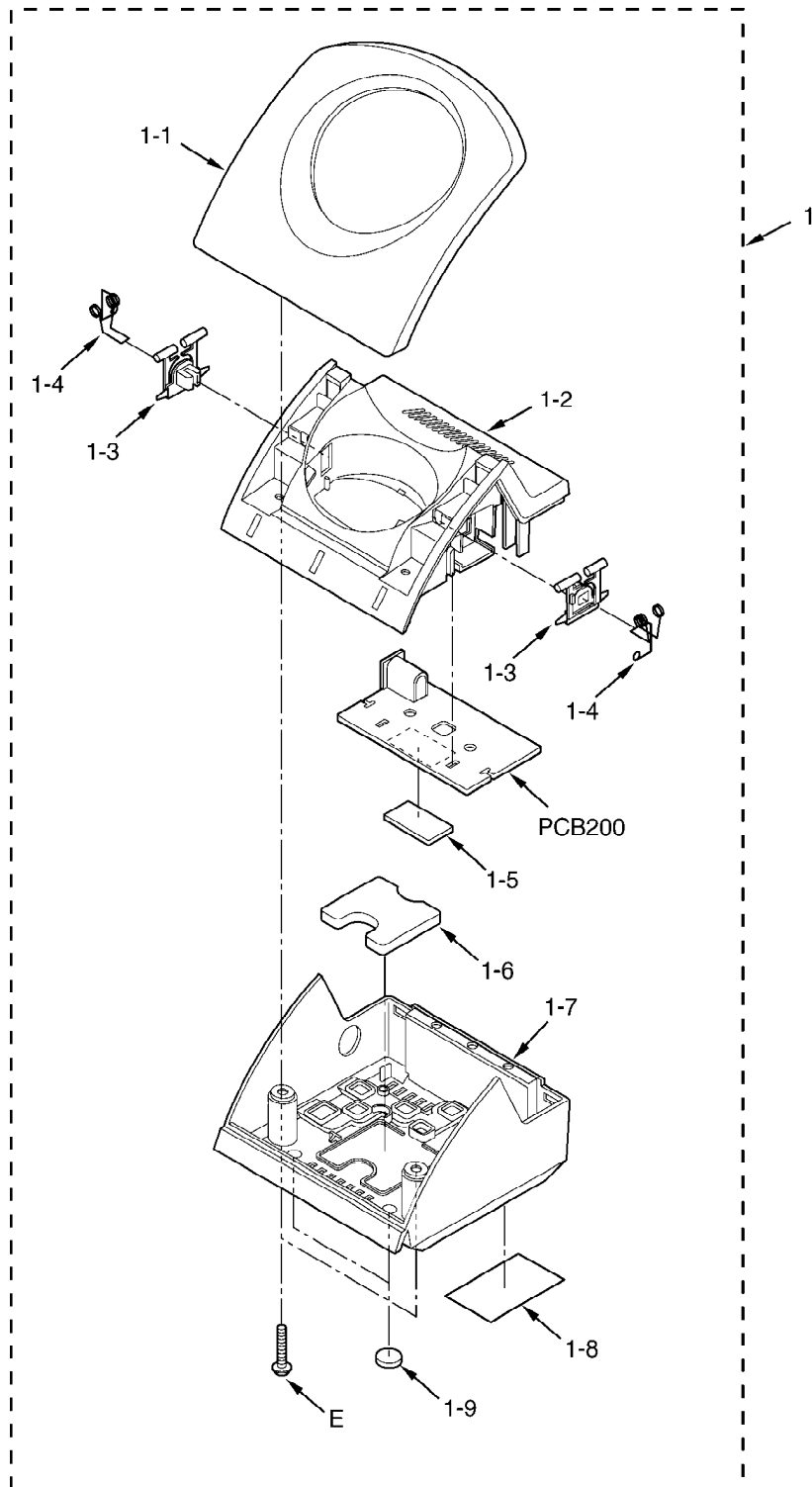
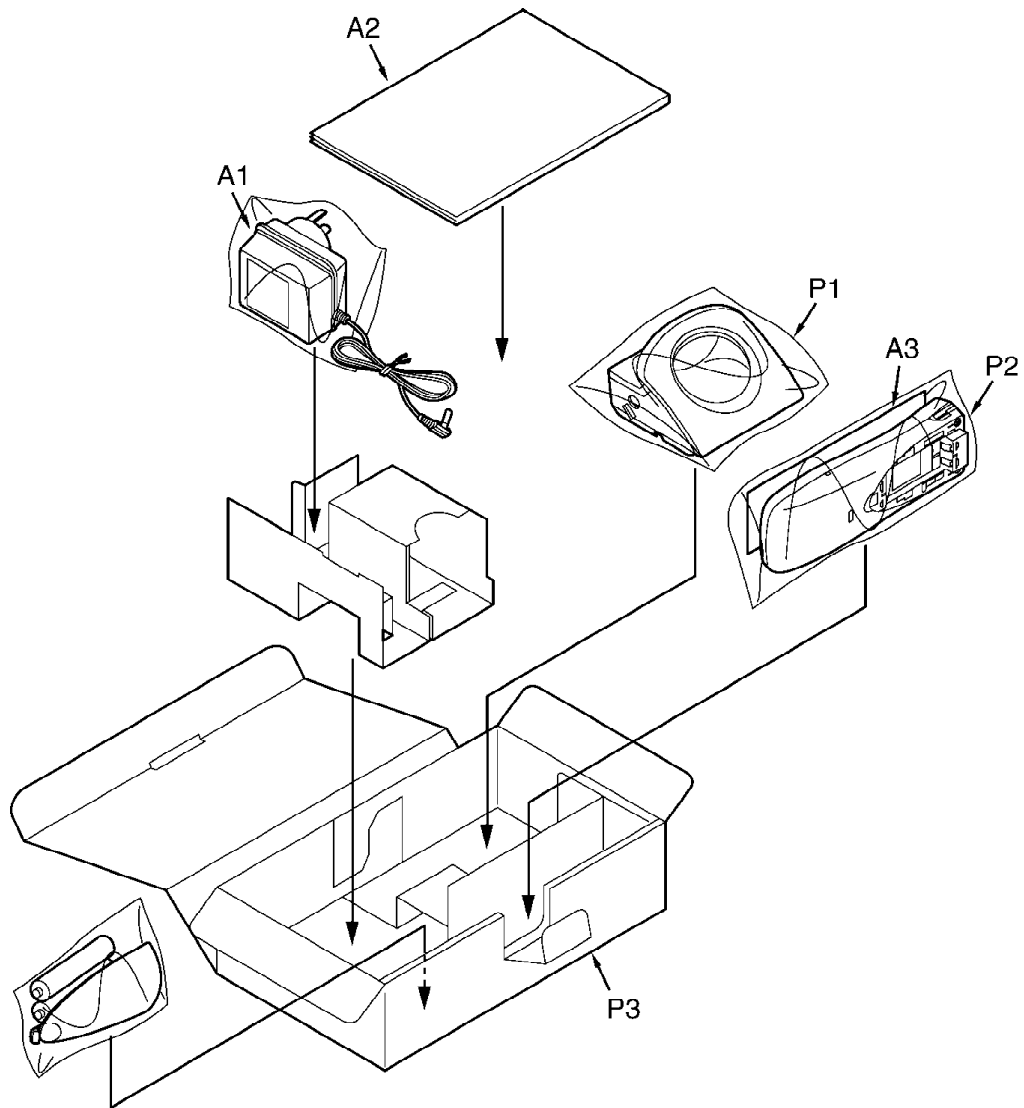| Ref.No.	Part No.	Figure
E	XTW26+14P	φ2.6 × 14mm

33. ACCESSORIES AND PACKING MATERIALS
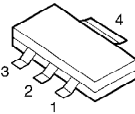
33.1. KX-TCD430ALB/ALW

33.2. KX-TCD432ALB/ALW
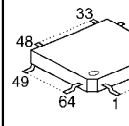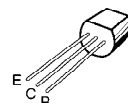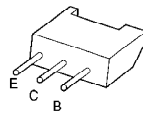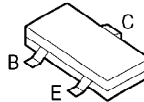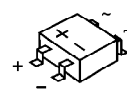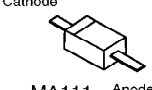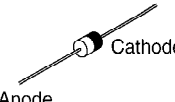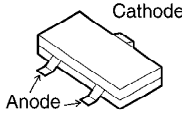
33.3. KX-A143ALB/ALW
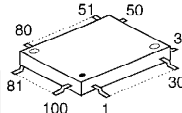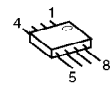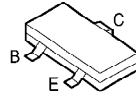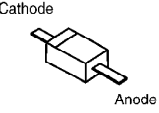
34. TERMINAL GUIDE OF THE ICs, TRANSISTORS AND DIODES

34.1. Base Unit

PQWI1D430ALH	C2HBAK000010	C0CBAYF00009	2SA1625	2SD1994A
B1ADGE000004, PQVTBF822T7 B1ABGE000006, B1ABCE000009	PQVDS1ZB60F1	MA111 MA1Z300 MA2Z74800L MA8036H	B0JAME000085	
B0DDCM000001				

34.2. Handset

C2HBAK000009	PQWI1D430ALR	B1ADGE000004, UN5216 B1CFMC000006, B1ABGE000006	B0JCME000035 MA2Z74800L MAZ83900ML MA111

34.3. Charger Unit

B0JAME000085
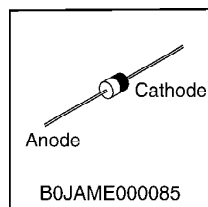
35. REPLACEMENT PARTS LIST

1. RTL (Retention Time Limited)

Note:
The marking (RTL) indicates that the Retention Time is limited for this item.
After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

2. Important safety notice
Components identified by the ⚠ mark indicates special characteristics important for safety. When replacing any of these

components, only use specified manufacture's parts.

3. **The S mark means the part is one of some identical parts. For that reason, it may be different from the installed part.**

4. **ISO code (Example: ABS-94HB) of the remarks column shows quality of the material and a flame resisting grade about plastics.**

5. **RESISTORS & CAPACITORS**
   Unless otherwise specified;
   All resistors are in ohms (Ω) K=1000 Ω , M=1000k Ω
   All capacitors are in MICRO FARADS (μ F)P= μ μ F
   *Type & Wattage of Resistor

Type

ERC:Solid	ERX:Metal Film	PQ4R:Chip
ERDS:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
ERJ:Chip	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage Of Capacitor

Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,F1K,ECUV:Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG:Polyester
ECUV,PQCUV,ECUE:Chip	ECEA,ECST,EEE:Electlytic
ECQMS:Mica	ECQP:Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others		
1H:50V	05:50V	0F:3.15V	0J :6.3V	1V :35V	
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V	
2E:250V	2:200V	1V:35V	1C :16V	1J :16V	
2H:500V		0J:6.3V	1E,25:25V	2A :100V	

35.1. Base Unit

35.1.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
1	PQGG10154U3	GRILLE (for KX-TCD430ALB)(for KX-TCD432ALB)	ABS-HB
1	PQGG10154U8	GRILLE (for KX-TCD430ALW)(for KX-TCD432ALW)	ABS-HB
2	PQKM10586W2	CABINET BODY (for KX-TCD430ALB)(for KX-TCD432ALB)	ABS-HB
2	PQKM10586WD	CABINET BODY (for KX-TCD430ALW)(for KX-TCD432ALW)	ABS-HB
3	PQJT10203Z	TERMINAL	
4	PQKE10356Z2	GUIDE, CHARGE TERMINAL CASE	POM-HB
5	PQSA10131Z	ANTENNA, MAIN	
6	PQSA10132Z	ANTENNA, SUB	
7	PQKF10581Z2	CABINET COVER (for KX-TCD430ALB)(for KX-TCD432ALB)	ABS-HB
7	PQKF10581ZB	CABINET COVER (for KX-TCD430ALW)(for KX-TCD432ALW)	ABS-HB
8	PQGT16735Z	NAME PLATE (for KX-TCD430ALB)(for KX-TCD432ALB)	
8	PQGT16879Z	NAME PLATE (for KX-TCD430ALW)(for KX-TCD432ALW)	
9	L0DACA000023	BUZZER	
10	PQHG10690Z	RUBBER PARTS, RINGERRUBBER	
11	PQHA10018Z	FOOT RUBBER	

35.1.2. Main P.C.Board Parts

Note:

(*1) When replacing IC1, data need to be written to it with PQZZTCD430AL.

Ref. No.	Part No.	Part Name & Description	Remarks
PCB1	PQWP1D430ALH	MAIN P.C.BOARD ASS'Y (RTL)	
		(ICs)	
IC1	PQWI1D430ALH	IC (*1)	S
IC2	C2HBAK000010	IC	
Q9	C0CBAYF00009	IC	S
		(TRANSISTORS)	
Q2	2SA1625	TRANSISTOR(SI)	S
Q3	PQVTBF822T7	TRANSISTOR(SI)	
Q6	2SD1994A	TRANSISTOR(SI)	
Q7	B1ABCE000009	TRANSISTOR(SI)	
Q8	B1ADGE000004	TRANSISTOR(SI)	
Q10	B1ABGE000006	TRANSISTOR(SI)	
		(DIODES)	
D2	PQVDS1ZB60F1	DIODE(SI)	S
D3	MA1Z300	DIODE(SI)	S
D4	B0JAME000085	DIODE(SI)	
D5	MA2Z74800L	DIODE(SI)	
D6	MA8036H	DIODE(SI)	S
D9	MA111	DIODE(SI)	S
DA1	B0DDCM000001	DIODE(SI)	
L1	PQLQR4D4R7K	COIL	
L3	PQLQR2M33NKT	COIL	S
L4	G1C2N7Z00008	COIL	
		(JACKS)	
J1	PFJJ1T007Z	JACK, MODULATOR	S
J2	PQJJ1B4Y	JACK, DC	
		(RESISTORS)	
R1	ERJ3GEYJ155	1.5M	
R2	ERJ3GEYJ155	1.5M	
R3	ERJ3GEYJ224	220K	
R4	ERJ3GEYJ184	180K	
R5	ERJ3GEYJ224	220K	
R6	ERJ3GEYJ184	180K	
R7	ERJ3GEYJ104	100K	
R8	ERJ3GEYJ272	2.7K	
R9	ERJ3GEYJ103	10K	
R10	ERJ3GEYJ222	2.2K	
R12	PQ4R18XJ000	0	S
R16	ERJ3GEYJ133	13K	
R17	ERJ3GEYJ333	33K	
R18	ERJ3GEYJ332	3.9K	
R19	ERJ12YJ220	22	
R20	ERJ12YJ560	56	
R21	ERJ3GEYJ104	100K	
R22	ERJ3GEYJ333	33K	
R23	ERJ3GEYJ560	56	
R24	PQ4R18XJ100	10	S
R25	ERJ3GEYJ221	150	

Ref. No.	Part No.	Part Name & Description	Remarks
R26	ERJ3GEYJ103	10K	
R27	ERJ3GEYJ222	2.2K	
R28	ERJ3GEYJ182	750	
R29	ERJ3GEYJ101	100	
R30	ERJ3GEYJ101	100	
R31	ERJ3GEYJ101	100	
R32	ERJ3GEYJ560	56	
R38	ERJ3GEYJ330	33	
R41	ERJ3GEYJ101	100	
R42	ERJ3GEYJ221	220	
R43	ERJ1WYJ330	33	
R44	ERJ1WYJ330	33	
R52	ERJ3GEY0R00	0	
R53	ERJ3GEYJ565	5.6M	
R54	ERJ3GEYJ184	180K	
R57	ERJ3GEYJ103	10K	
R58	ERJ3GEYJ103	10K	
R66	ERJ3GEYJ390	39	
R67	ERJ3GEYJ390	39	
R68	ERJ8GEYJ390	39	
R78	ERJ3GEYJ181	180	
R79	ERJ3GEYJ181	180	
R81	ERJ3GEYJ565	5.6M	
R82	ERJ3GEYJ184	180K	
R86	ERJ3GEY0R00	0	
R87	ERJ3GEY0R00	0	
R88	ERJ3GEY0R00	0	
R89	ERJ3GEYJ102	1K	
C80	PQ4R10XJ000	0	S
C86	ERJ3GEY0R00	0	
		(CAPACITORS)	
C1	ECKD2H681KB	680P	S
C2	ECKD2H681KB	680P	S
C3	ECQE2223KF	0.022	
C4	ECQE2223KF	0.022	
C11	ECUV1C333KBV	0.022	
C12	PQCUV1C474KB	0.47	
C13	PQCUV1A105KB	1	
C14	PQCUV1C224KB	0.22	
C15	ECEA1HKS100	10	S
C16	PQCUV1H104ZF	0.15	
C17	ECUV1C333KBV	0.033	
C18	ECUV1H100DCV	10P	
C19	ECUV1H100DCV	10P	
C20	ECUV1C104KBV	0.1	
C21	ECUV1H100DCV	10P	
C22	PQCUV1C224KB	0.22	
C23	ECUV1C104KBV	0.1	
C24	ECUV1C104KBV	0.1	
C25	ECEA1CKS100	10	S
C26	ECUV1C104KBV	0.1	
C27	ECUV1C104KBV	0.1	
C28	ECUV1C683KBV	0.068	
C29	ECUV1C683KBV	0.068	

Ref. No.	Part No.	Part Name & Description	Remarks
C30	ECUV1H182KBV	0.0018	
C32	ECUV1H270JCV	27P	
C33	ECUV1H1R0CCV	1	
C34	ECUV1C104KBV	0.1	
C35	ECUV1C333KBV	0.033	S
C36	ECUV1C104KBV	0.1	
C37	ECUV1C104KBV	0.1	
C38	ECUV1C104KBV	0.1	
C40	ECEA1CK101	100	
C41	ECEA0JKA101	100	
C43	ECUV1H100DCV	10P	
C48	ECUV1H330JCV	33P	
C49	ECUV1H103KBV	0.01	
C50	ECUV1H100DCV	10P	
C53	ECUV1H100DCV	10P	
C54	ECUV1H060DCV	6P	S
C55	ECUV1H100DCV	10P	
C56	ECUV1H100DCV	10P	
C57	ECUV1H030CCV	3P	
C58	ECUV1H020CCV	2P	
C66	ECUV1H020CCV	2P	
C67	ECUV1A475KB	4.7	
C69	ECUV1H020CCV	2P	
C72	ECUV1H020CCV	2P	
C73	ECUV1H100DCV	10P	
C74	ECUV1H103KBV	0.01	
C76	ECUV1H060DCV	6P	S
C78	ECUV1H100DCV	10P	
C79	ECUV1C104KBV	0.1	
C89	ECUV1H102KBV	0.001	
C90	ECUV1H101JCV	100P	
C94	ECUV1H0R5CCV	0.5P	
C96	ECUV1H100DCV	10P	
C97	ECUV1H100DCV	10P	
C98	PQCUV1H0R5CC	0.5P	
C99	ECUV1H100DCV	10P	
		(OTHERS)	
IC3	J3FKK0000003	RF UNIT	
S1	K0H1BB000018	SPECIAL SWITCH, TACTILE	
SA1	J0LF00000026	VARISTOR (SURGE ABSORBER)	S
X1	H0D103500003	CRYSTAL OSCILLATOR	

35.2. Handset

35.2.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
101	PQGP10225X2	PANEL, LCD (for KX-A143ALB)	AS-HB
101	PQGP10225X6	PANEL, LCD (for KX-A143ALW)	AS-HB
102	PQKM10587Z3	CABINET BODY (for KX-A143ALB)	ABS-HB
102	PQKM10587Z8	CABINET BODY (for KX-A143ALW)	ABS-HB
103	PQHS10553Z	TAPE, DOUBLE SIDE	
104	PQHS10554Z	SPACER, LCD	
105	PQBC10375Z1	PUSH BUTTON, NAVI	
106	PQSX10224M	KEYBOARD SWITCH, 20KEY (for KX-A143ALB)	
106	PQSX10224N	KEYBOARD SWITCH, 20KEY (for KX-A143ALW)	
107	PQHS10467Z	COVER, SP NET	
108	L0AD02A00016	SPEAKER	
109	PQSA10134Z	ANTENNA	
110	PQJT10204Z	TERMINAL (L)	
111	PQJT10205Z	TERMINAL (R)	
112	PQHX11202Z	INSULATOR	
113	PQJC10058Z	BATTERY TERMINAL (+)	
114	PQJC10057Z	BATTERY TERMINAL (-)	
115	PQJC10056Z	BATTERY TERMINAL	
116	PQKF10582Y3	CABINET COVER (for KX-A143ALB)	ABS-HB
116	PQKF10582YA	CABINET COVER (for KX-A143ALW)	ABS-HB
117	PQGT16736Z	NAME PLATE (for KX-A143ALB)	
117	PQGT16876Z	NAME PLATE (for KX-A143ALW)	
118	PQHX11266Z	PLASTIC PARTS, BATTERY COVER SHEET	
119	PQHS10561Y	SPACER, BATTERY COVER	
120	PQKK10134X3	LID, BATTERY COVER (for KX-A143ALB)	ABS-HB
120	PQKK10134XJ	LID, BATTERY COVER (for KX-A143ALW)	ABS-HB
121	L0DACD000002	BUZZER	
122	PQHG10684Z	RUBBER PARTS, RINGER	
123	PQHS10626Z	FELT PARTS, TAPE	

35.2.2. Main P.C.Board Parts

Note:

(*2) When replacing IC2, data need to be written to it with PQZZTCD430AL.

Ref. No.	Part No.	Part Name & Description	Remarks
PCB100	PQWP1D430ALR	**MAIN P. C. BOARD ASS'Y (RTL) (for KX-TCD430ALB)(for KX-TCD430ALW)(for KX-TCD432ALB)(for KX-TCD432ALW)**	
PCB100	PQWP1D143ALR	**MAIN P. C. BOARD ASS'Y (RTL) (for KX-A143ALB)(for KX-A143ALW)**	
		(ICs)	
IC1	C2HBAK000013	**IC**	
IC2	PQWI1D430ALR	**IC (for KX-TCD430ALB)(for KX-TCD430ALW)(for KX-TCD432ALB)(for KX-TCD432ALW) (*2)**	S
		(TRANSISTORS)	
Q1	B1CFMC000006	**TRANSISTOR(SI)**	
Q2	B1ADGE000004	**TRANSISTOR(SI)**	
Q3	UN5216	**TRANSISTOR(SI)**	S
Q104	B1ABGE000006	**TRANSISTOR(SI)**	S
		(DIODES)	
D1	B0JCME000035	**DIODE(SI)**	
D3	MA2Z74800L	**DIODE(SI)**	
D6	MA8047	**DIODE(SI)**	
D7	MA8047	**DIODE(SI)**	
D102	MA111	**DIODE(SI)**	S
		(COILS)	
L2	G1A470L00001	**COIL**	
L3	PQLQR4D4R7K	**COIL**	
L4	G1C100MA0072	**COIL**	
L5	G1C100MA0072	**COIL**	
L6	G1C2N7Z00008	**COIL**	
F1	PQLQR2M5N6K	**COIL**	S
		(RESISTORS)	
R1	ERJ3GEYJ222	**2.2K**	
R2	ERJ8BQJR30	**0.3**	
R3	ERJ3GEYJ560	**56**	
R4	ERJ3GEYJ103	**10K**	
R5	ERJ3GEYJ471	**330**	
R6	ERJ3GEYJ332	**3.3K**	
R7	ERJ3GEYJ471	**330**	
R8	ERJ3GEYJ471	**330**	
R11	ERJ2GEY0R00	**0**	
R17	ERJ2GEYJ560	**0**	
R18	ERJ2GEYJ330	**33**	
R19	ERJ3GEYJ153	**15K**	
R20	ERJ2GEYJ560	**0**	
R21	ERJ6RSJR10V	**0.1**	
R22	ERJ3GEY0R00	**0**	
R23	ERJ3GEYJ2R2	**2.2**	
R106	ERJ2GEYJ102	**1K**	
R109	ERJ2GEYJ103	**10K**	
R110	PQ4R18XJ150	**15**	S
		(CAPACITORS)	
C2	ECUV1A475KB	**4.7**	
C3	ECUV1C104KBV	**0.1**	
C4	ECUV1C104KBV	**0.1**	
C5	ECST0JY475	**4.7**	
C6	ECUV1H100DCV	**10P**	
C7	ECUV1C104KBV	**0.1**	
C8	ECUV1H100DCV	**10P**	

Ref. No.	Part No.	Part Name & Description	Remarks
C12	ECUE1H100DCQ	10P	S
C14	EEE1AA221P	220P	
C15	EEE1AA221P	220P	
C16	ECUV1H1R0CCV	1P	
C17	ECUV1H180JCV	18P	
C18	ECUE1A104KBQ	0.1	
C20	ECUE1A104KBQ	0.1	
C21	ECUE1A104KBQ	0.1	
C22	ECUE1A104KBQ	0.1	
C23	ECUV1C104KBV	0.1	
C24	ECUV1C104KBV	0.1	
C26	ECUV1C104KBV	0.1	
C27	ECUE1A104KBQ	0.1	
C28	ECUV1C104KBV	0.1	
C29	ECUV1C104KBV	0.1	
C30	ECUV1C104KBV	0.1	
C31	ECUE1H100DCQ	10P	S
C33	ECUV1A225KB	2.2	
C54	ECUE1C100DCQ	10P	
C55	ECUE1H2R0CCQ	2P	
C56	ECUE1H2R0CCQ	2P	
C57	ECUE1H330JCQ	33P	
C60	ECST0JY475	4.7	
C62	ECUV1A105KBV	1	
C64	ECUV1A105KBV	1	
C65	ECUE1H100DCQ	3P	
C66	ECUE1H100DCQ	2P	
C67	ECUE1H2R0CCQ	10P	
C101	ERJ2GEY0R00	0	
C108	ECUV1H100DCV	10P	
C109	ECUV1C104KBV	0.1	
C115	ECUV1H100DCV	10P	
C116	ECUV1H100DCV	10P	
C202	ECUE1H0R5CCQ	0.5	S
C206	ECUV1A475KB	4.7	
C208	ECUE1C100DCQ	10P	
C209	ECUV1H100DCV	10P	
		(OTHERS)	
MIC	L0CBAB000069	BUILTIN-MICROPHONE	
E101	PQHR11042Z	GUIDE, LCD HOLDER	
E102	PQHS10486Z	TAPE, HEATSEAL	
E103	PQHS10647Z	TAPE, DOUBLE SIDED (LCD)	
E104	L5ACADC00020	LIQUID CRYSTAL DISPLAY	
IC3	J3FKK0000003	RF UNIT	
X1	H0D103500002	CRYSTAL OSCILLATOR	

35.3. Charger Unit

35.3.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
1	PQLV30018ZB	ACCESSORY PARTS, CHARGER UNIT (for KX-TCD432ALB)(for KX-A143ALB)	
1	PQLV30018ZW	ACCESSORY PARTS, CHARGER UNIT (for KX-TCD432ALW)(for KX-A143ALW)	
1-1	PQGG10155Z3	GRILLE (for KX-TCD432ALB)(for KX-A143ALB)	ABS-HB
1-1	PQGG10155ZB	GRILLE (for KX-TCD432ALW)(for KX-A143ALW)	ABS-HB
1-2	PQKM10591Y1	CABINET BODY (for KX-TCD432ALB)(for KX-A143ALB)	PS-HB
1-2	PQKM10591YA	CABINET BODY (for KX-TCD432ALW)(for KX-A143ALW)	PS-HB
1-3	PQKE10356Z2	GUIDE, CHARGE TERMINAL CASE	POM-HB
1-4	PQJT10206Z	CHARGE TERMINAL	
1-5	PQHX10991Z	CUSHION, URETHANE FORM	
1-6	PQMH10426Z	WEIGHT	
1-7	PQKF10586Z1	CABINET COVER (for KX-TCD432ALB)(for KX-A143ALB)	PS-HB
1-7	PQKF10586ZA	CABINET COVER (for KX-TCD432ALW)(for KX-A143ALW)	PS-HB
1-8	PQGT16650Z	NAME PLATE (for KX-TCD432ALB)(for KX-A143ALB)	
1-8	PQGT16726Z	NAME PLATE (for KX-TCD432ALW)(for KX-A143ALW)	
1-9	PQHG316Z	FOOT RUBBER	

35.3.2. Main P.C.Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB200	PQWPA142ESCH	MAIN P. C. BOARD ASS'Y (RTL)	
		(DIODE)	
D1	B0JAME000085	DIODE(SI)	
		(JACK)	
J1	PQJJ1B4Y	JACK	S
		(RESISTORS)	
R1	ERJ1WYJ220	22	
R2	ERJ1WYJ270	27	

35.4. Accessories and Packing Materials

35.4.1. KX-TCD430ALB/ALW

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PQLV19ALZ	AC ADAPTOR	⚠
A2	PQJA10059Z	CORD, TELEPHONE	
A3	PQJP02S13Z	CONNECTOR	
A4	PQQX14068Z	INSTRUCTION BOOK	
A5	PQQW12846W	LEAFLET, RECHARGE	
P1	PQPP10100Z	PROTECTION COVER (for Base Unit)	
P2	PQPP10084Z	PROTECTION COVER (for Handset)	
P3	PQPK14244Z	GIFT BOX	
P4	PQPD10603Z	CUSHION	
P5	PQPD10620Z	CUSHION	

35.4.2. KX-TCD432ALB/ALW

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PQLV19ALZ	AC ADAPTOR (for Base Unit)	⚠
A2	PQLV200ALZ	AC ADAPTOR (for Charger)	⚠
A3	PQJA10059Z	CORD, TELEPHONE	
A4	PQJP02S13Z	CONNECTOR	
A5	PQQX14068Z	INSTRUCTION BOOK	
A6	PQQW13258Z	LEAFLET	
A7	PQQW12846W	LEAFLET, RECHARGE	
P1	PQPP10100Z	PROTECTION COVER (for Base Unit)	
P2	PQPP10084Z	PROTECTION COVER (for Handset)	
P3	PQPP10086Z	PROTECTION COVER (for Charger)	
P4	PQPK14245Y	GIFT BOX	
P5	PQPD10563Z	CUSHION	

35.4.3. KX-A143ALB/ALW

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PQLV200ALZ	AC ADAPTOR	⚠
A2	PQQX14186Z	INSTRUCTION BOOK	
A3	PQQW12846W	LEAFLET, RECHARGE	
P1	PQPP10086Z	PROTECTION COVER (for Charger Unit)	
P2	PQPP10084Z	PROTECTION COVER (for Handset)	
P3	PQPK14247Z	GIFT BOX	

35.5. Fixtures and Tools

Part No.	Part Name & Description	Remarks
PQZZ1CD420BX	I2C PCB	
PQZZ1CD705BX	RS232C CABLE	
PQZZ2CD705BX	CLIP CABLE	
PQZZ3CD705BX	DC CABLE	
PQZZTCD430AL	BATCH FILE	

Note:

See **CHECK PROCEDURE (BASE UNIT)** (), and **CHECK PROCEDURE (HANDSET)** ().

36. FOR SCHEMATIC DIAGRAM

36.1. Base Unit (SCHEMATIC DIAGRAM (BASE UNIT))

Notes:

1. DC voltage measurements are taken with voltmeter from the negative voltage line.

> Important Safety Notice:
> Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

2. This schematic diagram may be modified at any time with the development of new technology.

36.2. Handset (SCHEMATIC DIAGRAM (HANDSET))

Notes:

1. DC voltage measurements are taken with an oscilloscope or a tester with a ground.

2. The schematic diagrams and circuit board may be modified at any time with the development of new technology.

36.3. Charger Unit (SCHEMATIC DIAGRAM (CHARGER UNIT))

Notes:

1. DC voltage measurements are taken with voltmeter from the negative voltage line.

> Important Safety Notice:
> Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

2. This schematic diagram may be modified at any time with the development of new technology.

37. SCHEMATIC DIAGRAM (BASE UNIT)

38. SCHEMATIC DIAGRAM (HANDSET)

39. SCHEMATIC DIAGRAM (CHARGER UNIT)

40. CIRCUIT BOARD (BASE UNIT)

40.1. Component View

40.2. Flow Solder Side View

41. CIRCUIT BOARD (HANDSET)
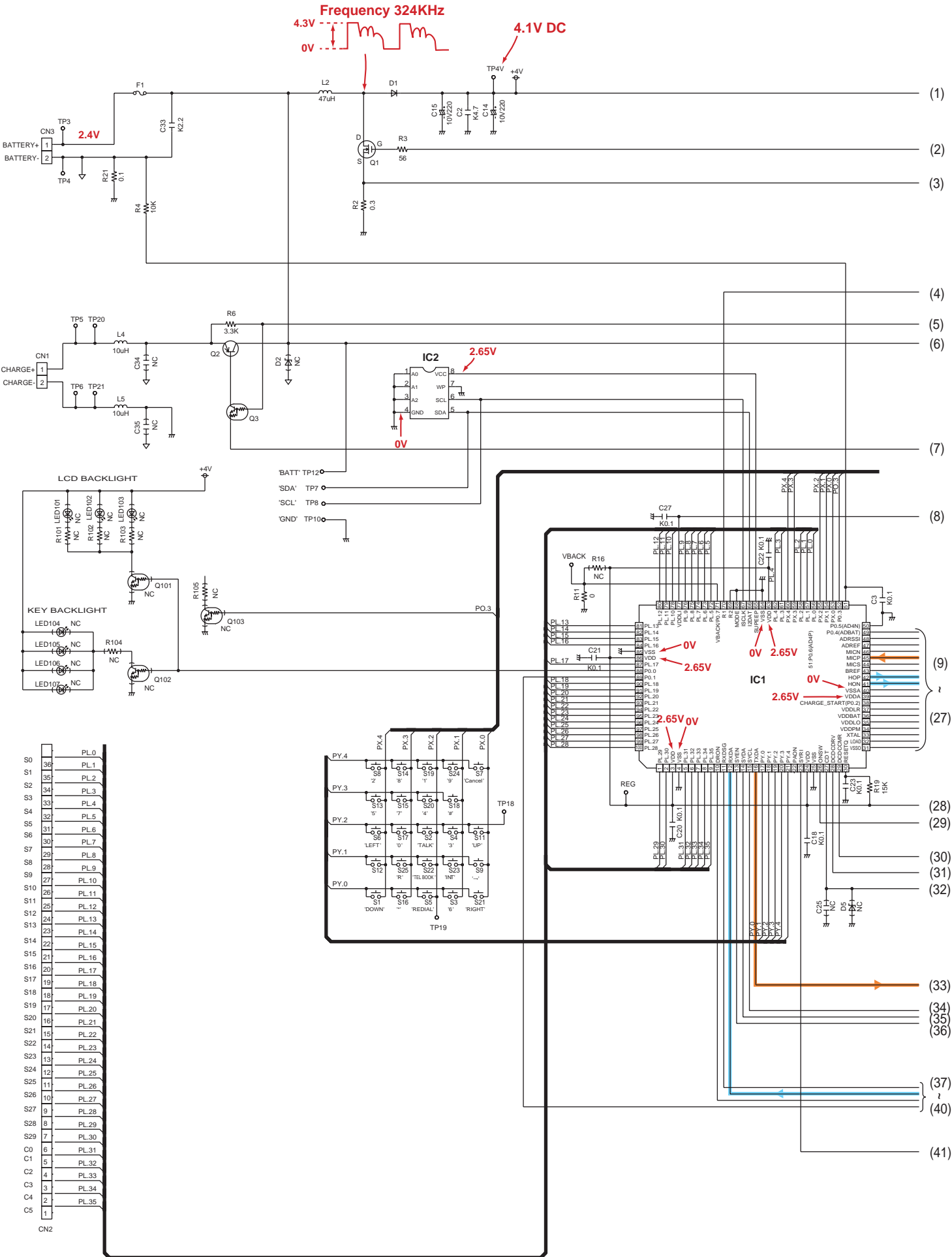
41.1. Component View

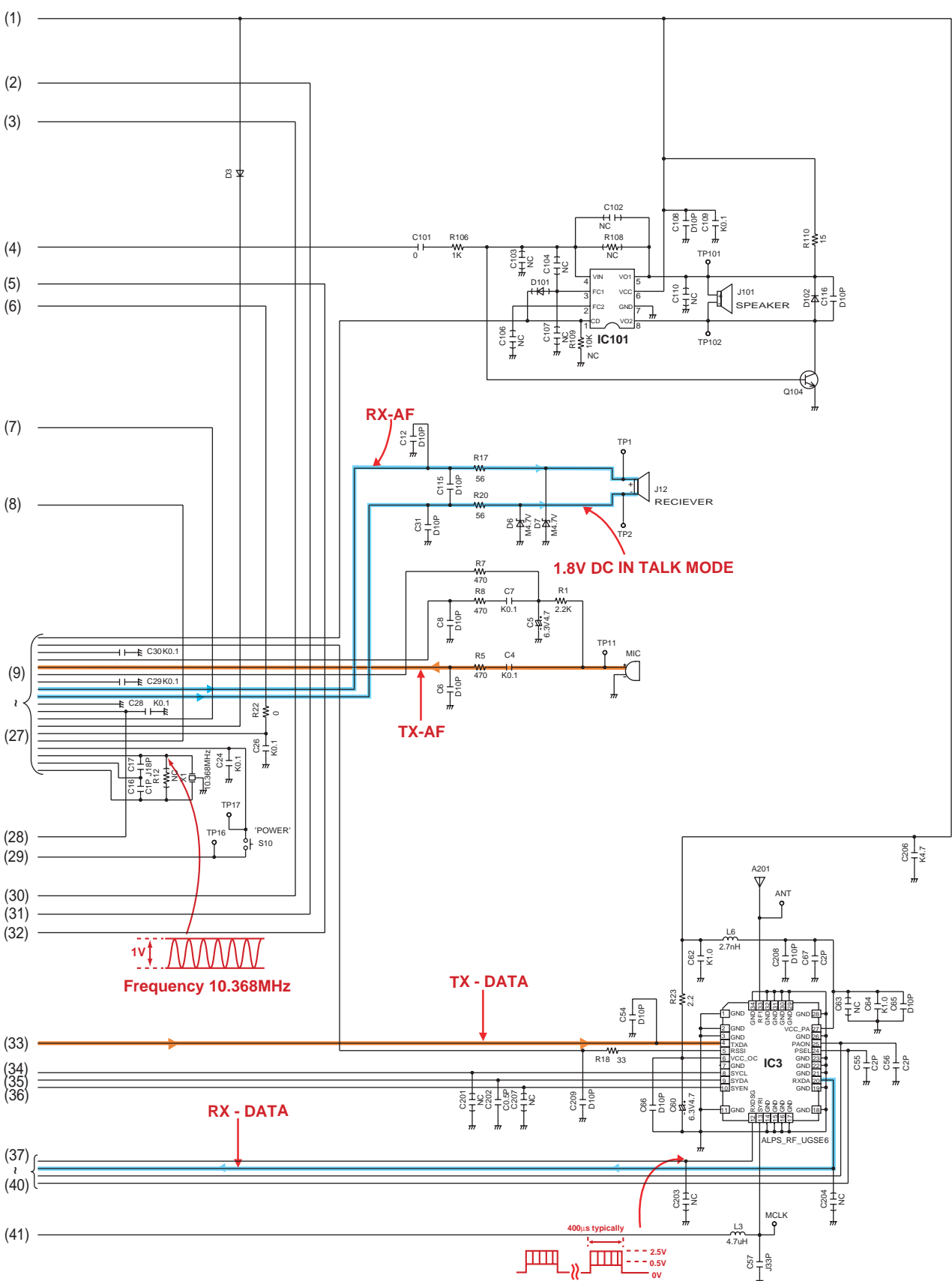## 41.2. Flow Solder Side View
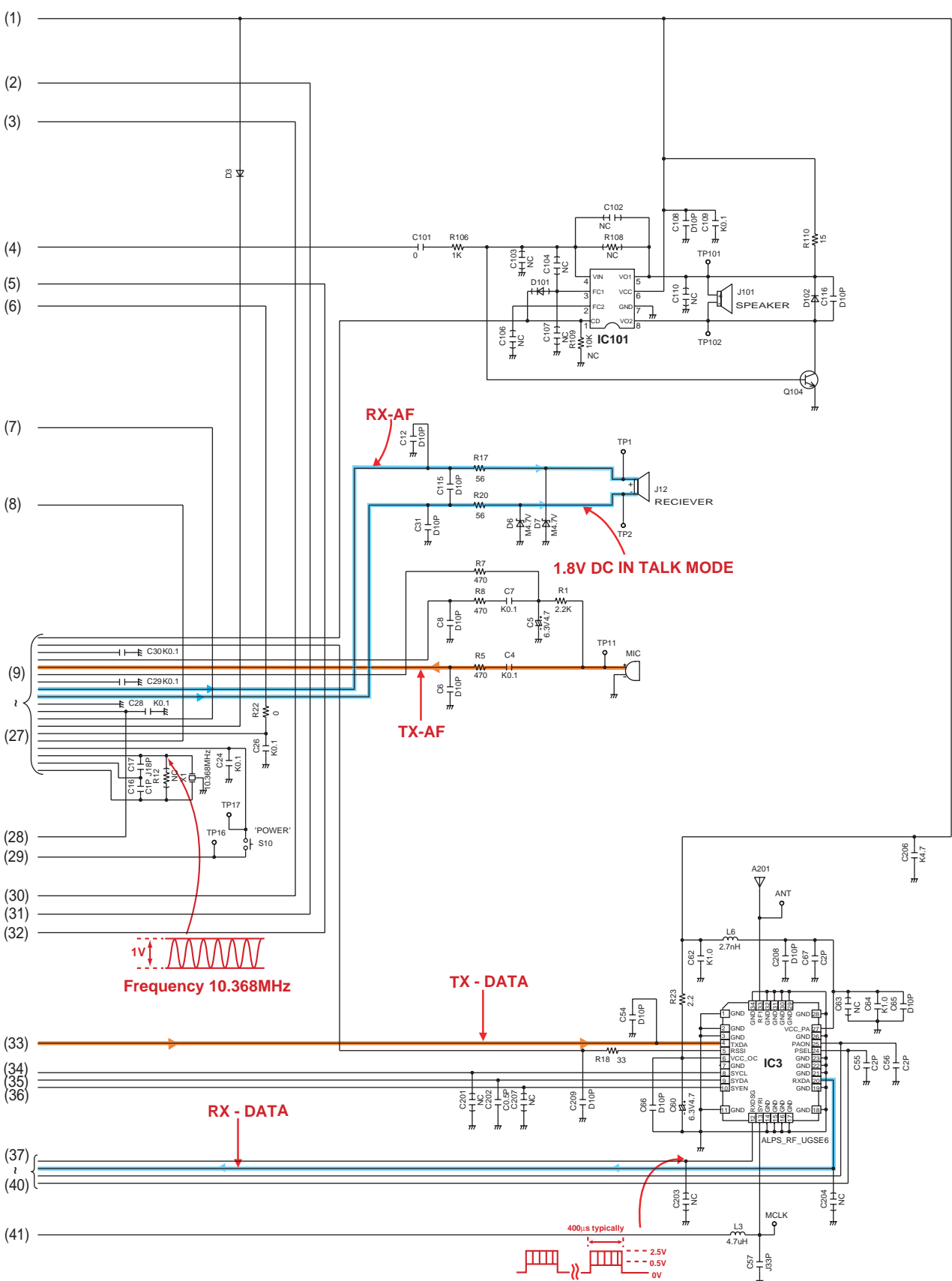
42. CIRCUIT BOARD (CHARGER UNIT)

42.1. Component View

42.2. Flow Solder Side View

I.N. / KXTCD430ALB / KXTCD430ALW / KXTCD432ALB / KXTCD432ALW / KXA143ALB / KXA143ALW
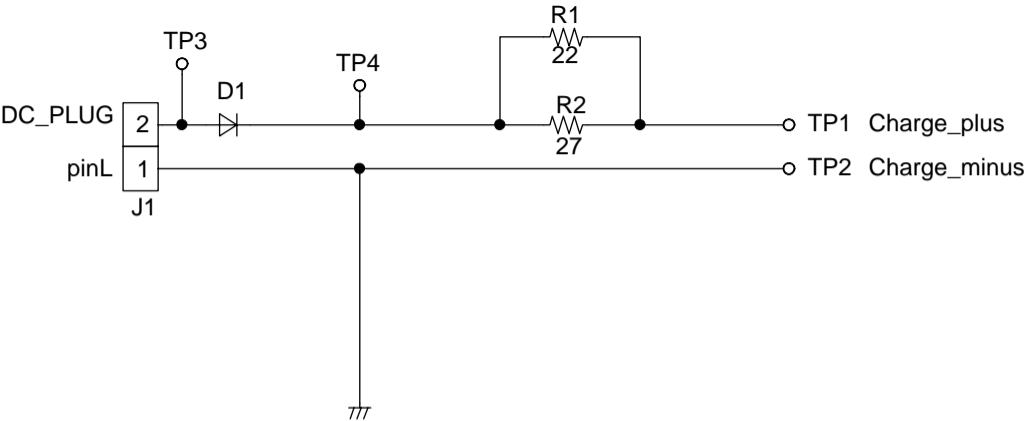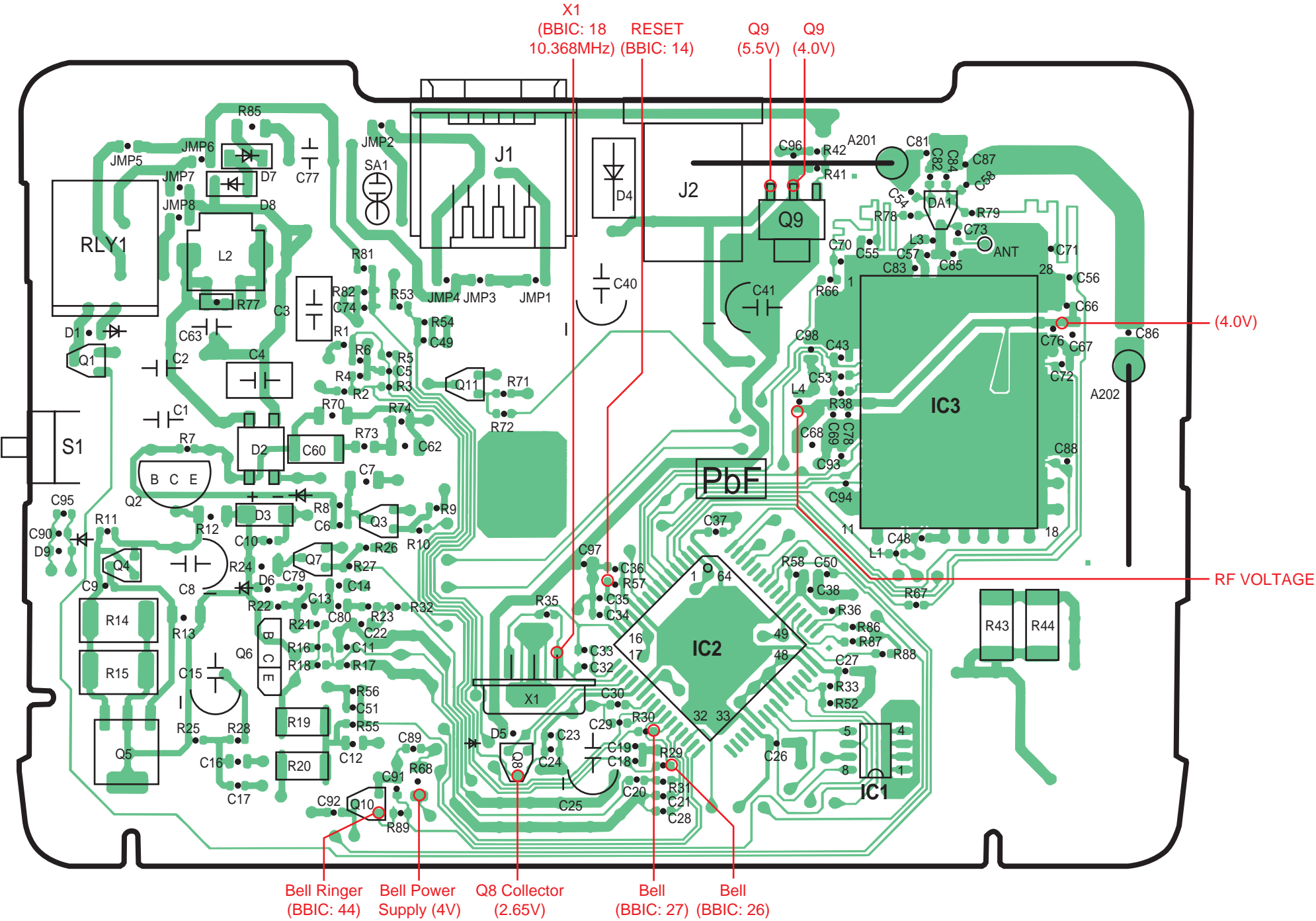
LINE VOLTAGE 60V DC

60v DC

+60V DC ON-HOOK
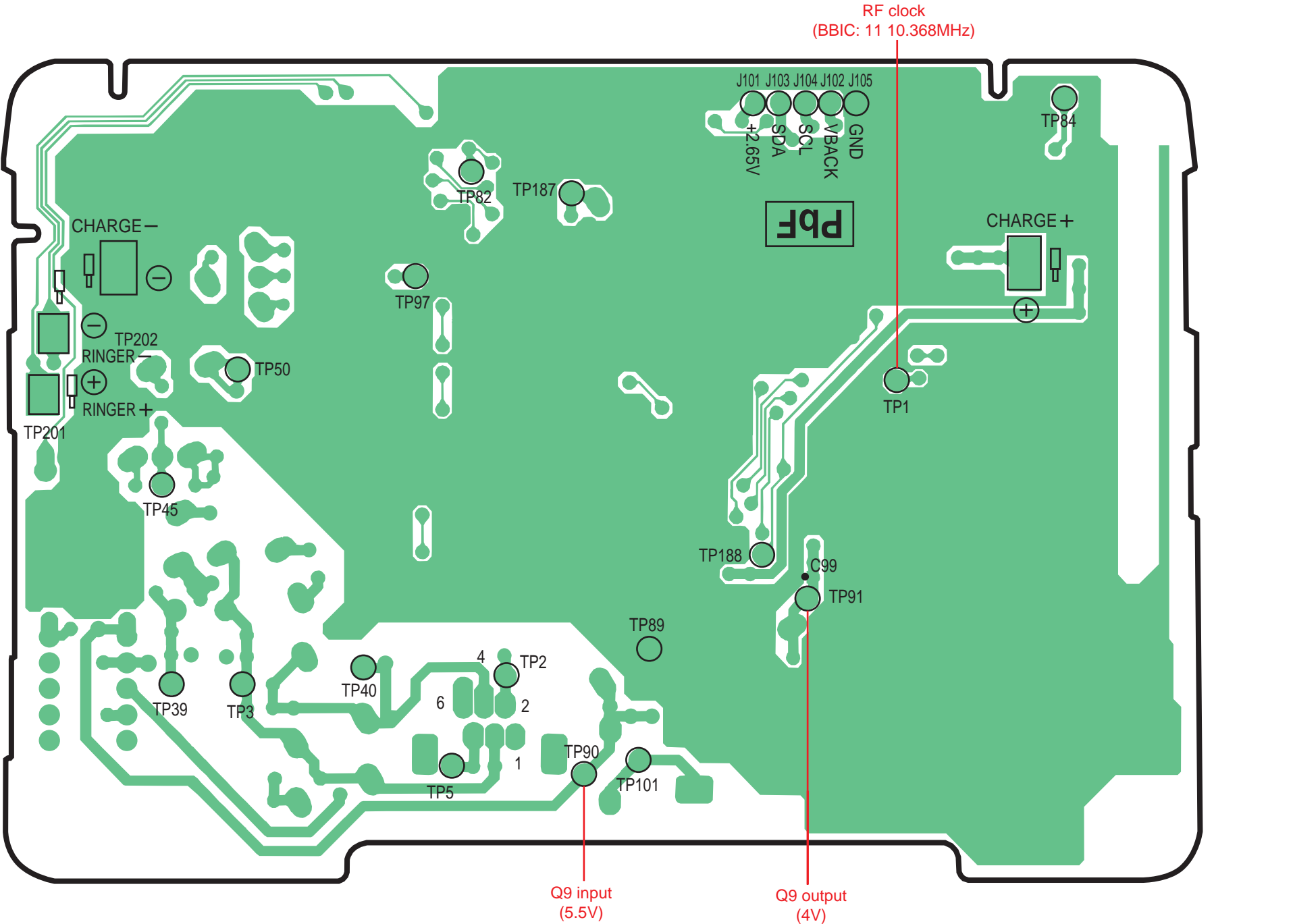+10V DC OFF-HOOK

0V ON-HOOK
+0.7V DC OFF-HOOK

+4.0V DC

: No Components

KX-TCD430ALB/ALW SCHEMATIC DIAGRAM (BASE UNIT)

KX-TCD430ALB/ALW SCHEMATIC DIAGRAM (BASE UNIT)

[ ] : No Components

RX-AF

TX-AF

1.8V DC IN TALK MODE

1V

Frequency 10.368MHz

TX - DATA

RX - DATA

400μs typically

2.5V
0.5V
0V

(1)
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)
(27)
(28)
(29)
(30)
(31)
(32)
(33)
(34)
(35)
(36)
(37)
(40)
(41)

IC101
IC3
SPEAKER J101
RECIEVER J12
MIC
ALPS_RF_UGSE6
ANT A201
MCLK
'POWER' S10

D3
C102 NC
R108 NC
C108 C109 K0.1
C101 0   R106 1K   C103 NC   C104 NC   R110 15
D101   TP101
C110 NC   D102   C116 D10P
C106 NC   C107 NC   R109 10K
Q104
TP102
VIN VO1
FC1 VCC
FC2 GND
CD VO2

C12 D10P
R17 56   TP1
C115 D10P
R20 56
C31 D10P   D6 M4.7V D7 M4.7V   TP2

R7 470
R8 470   C7 K0.1   R1 2.2K
C8 D10P   C5 6.3V4.7
R5 470   C4 K0.1   TP11
C6 D10P

C30 K0.1
C29 K0.1
C28 K0.1
R22 0
C16 C17 C1 P 18P R12 NC X1 10.368MHz C24 NC C26 K0.1
TP17
TP16

C206 K4.7
L6 2.7nH
C62 K1.0   C208 D10P C67   C2P
R23 2.2
C54 D10P
C63 NC C64 C65 K1.0 C2 D10P
R18 33
C55 C2P C56 C2P
C201 NC C202 NC C0.5P C207 NC   C209 D10P
C66 D10P C60 C6.3V4.7
C203 NC
L3 4.7uH
C57 J33P   C204 NC
J33P MCLK

GND RF1
VCC_PA
PAON
PSEL
GND
GND
GND
RXDA
GND
GND
TXDA
RSSI
VCC_OC
SYCL
SYDA
SYEN
RXDSG SYRI

RX-AF

1.8V DC IN TALK MODE

TX-AF

Frequency 10.368MHz

1V

TX - DATA

RX - DATA

400µs typically

2.5V
0.5V
0V

SPEAKER
RECIEVER
MIC
IC101
IC3
ANT
ALPS_RF_UGSE6
MCLK
'POWER'

KX-A143ALB/ALW SCHEMATIC DIAGRAM (HANDSET)

DC_PLUG

TP3

D1

TP4

R1
22

R2
27

J1

pinL

2

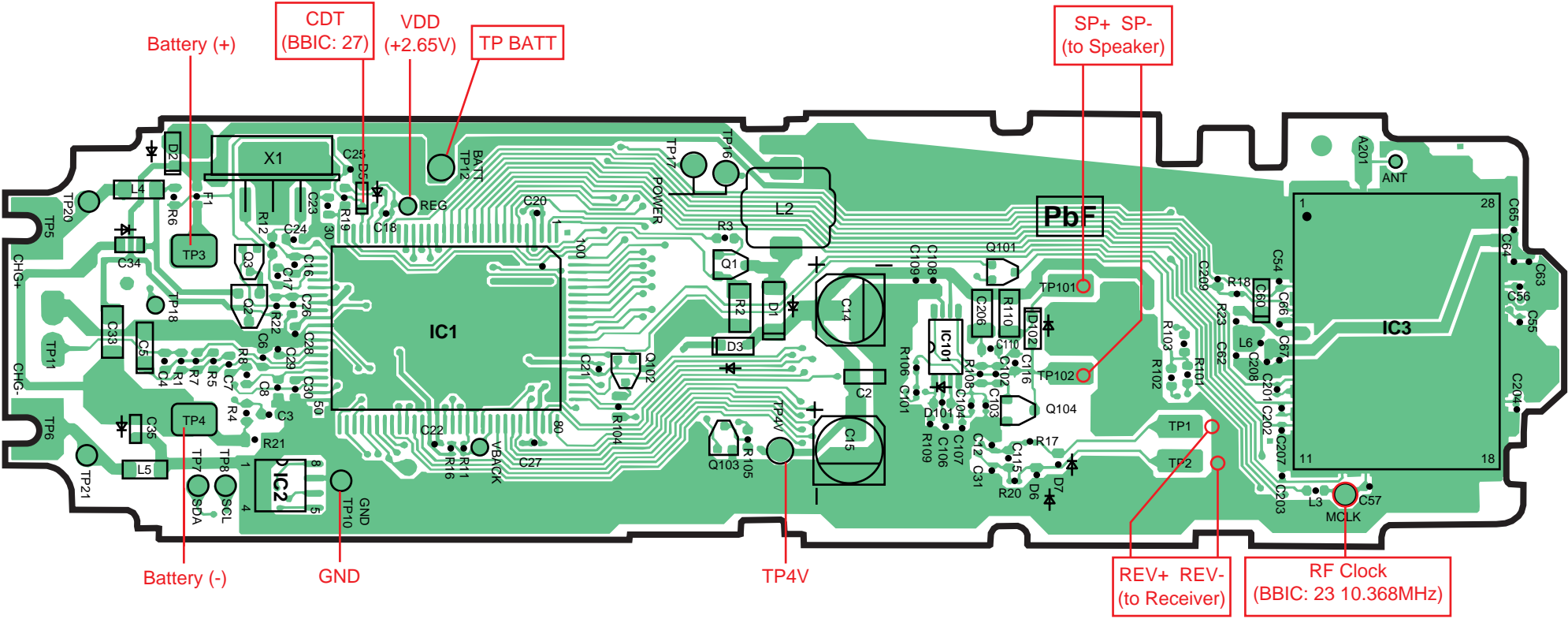1

TP1 Charge_plus

TP2 Charge_minus

SCHEMATIC DIAGRAM (CHARGER UNIT)

KX-TCD430ALB/ALW CIRCUIT BOARD (BASE UNIT) Component View

RF clock
(BBIC: 11 10.368MHz)

J101 J103 J104 J102 J105

+2.65V
SDA
SCL
VBACK
GND

PbF

CHARGE−

TP82

TP187

TP97

TP202

RINGER−

TP50

RINGER＋

TP201

TP45

CHARGE＋

TP1

TP188

C99

TP91

TP89

TP84

4 TP2

TP40

6   2

TP39   TP3

1

TP90

TP5

TP101

Q9 input
(5.5V)

Q9 output
(4V)

KX-TCD430ALB/ALW CIRCUIT BOARD (BASE UNIT) Flow Solder Side View

KX-A143ALB/ALW CIRCUIT BOARD (HANDSET) Component View
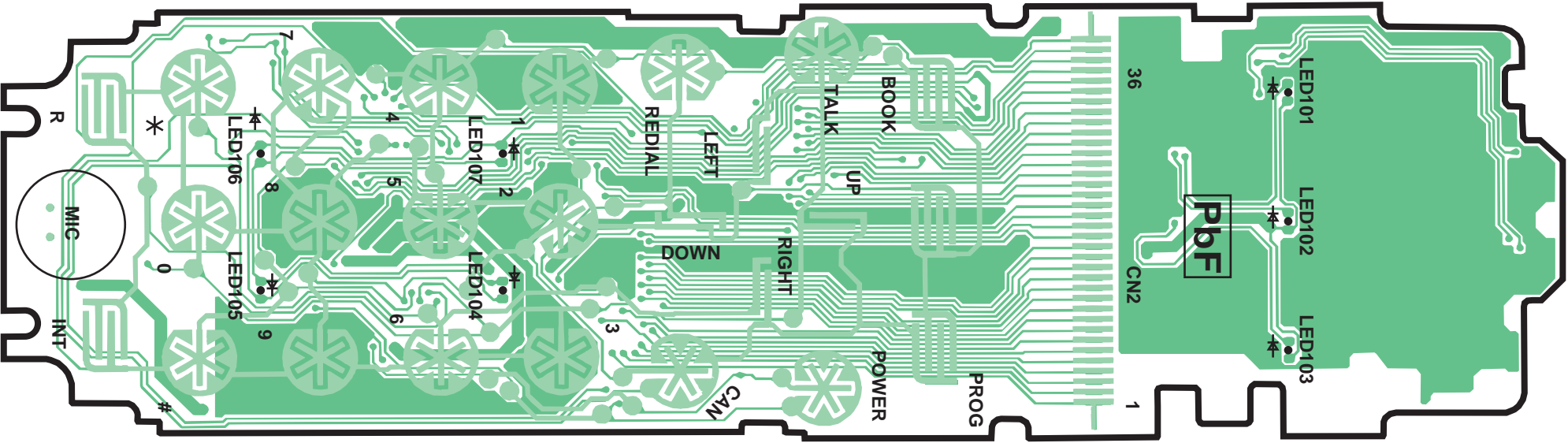
KX-A143ALB/ALW CIRCUIT BOARD (HANDSET) Flow Solder Side View

J1

PbF
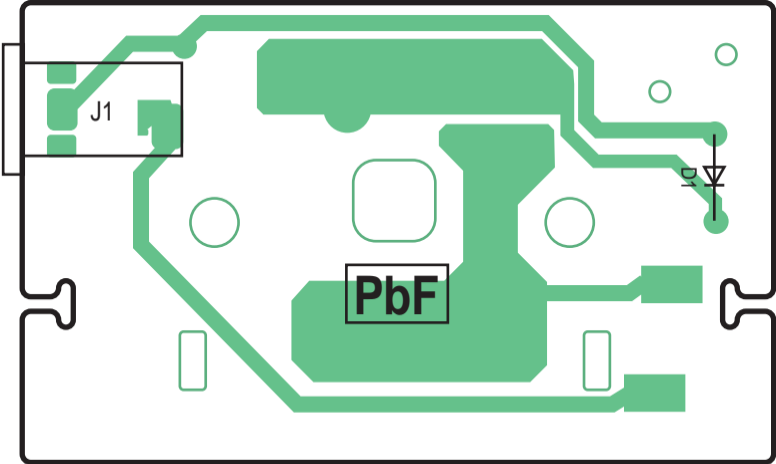
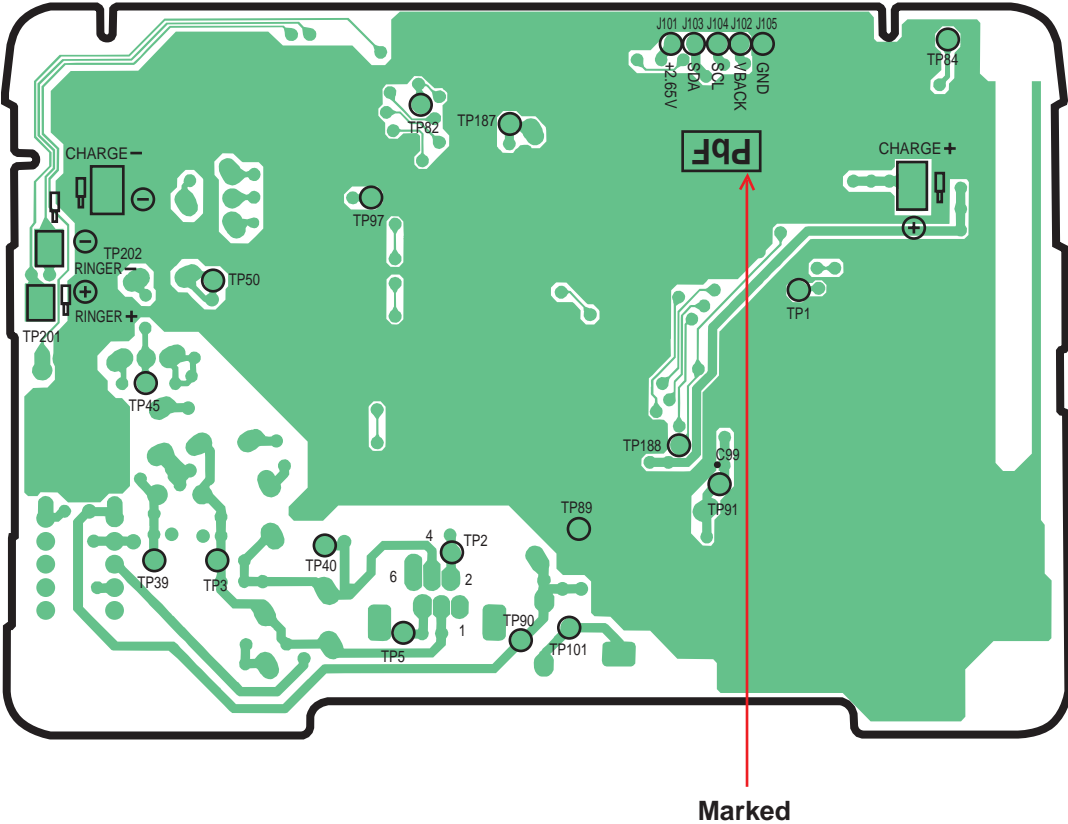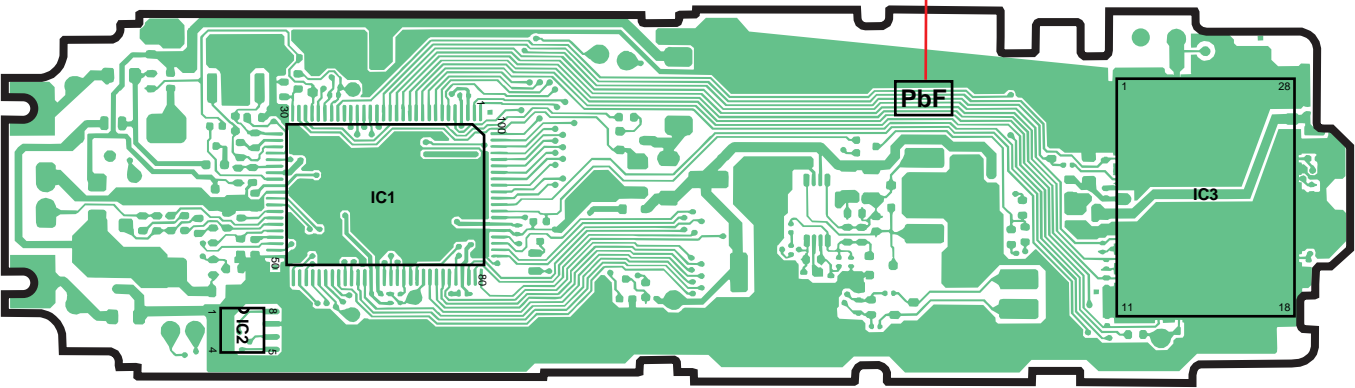CIRCUIT BOARD (CHARGER UNIT) Component View

R1

R2

TP3

TP4

PbF

TP1

TP2
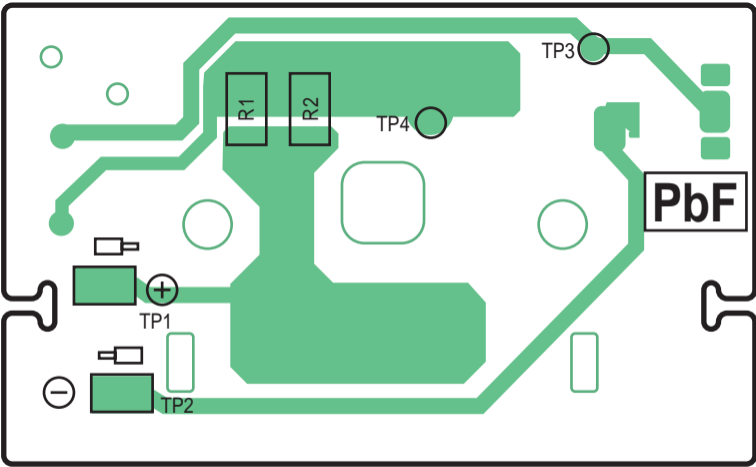
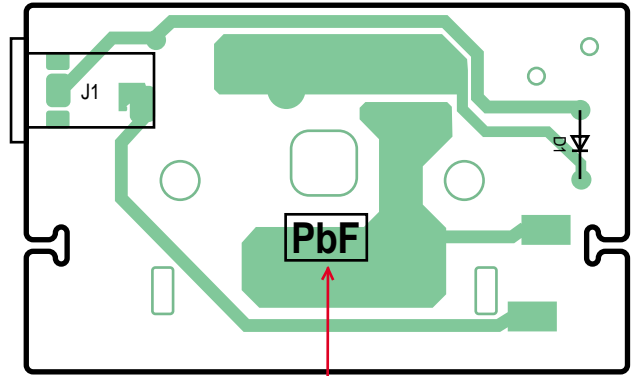CIRCUIT BOARD (CHARGER UNIT) Flow Solder Side View

Marked

PbF

IC3

IC2

IC1
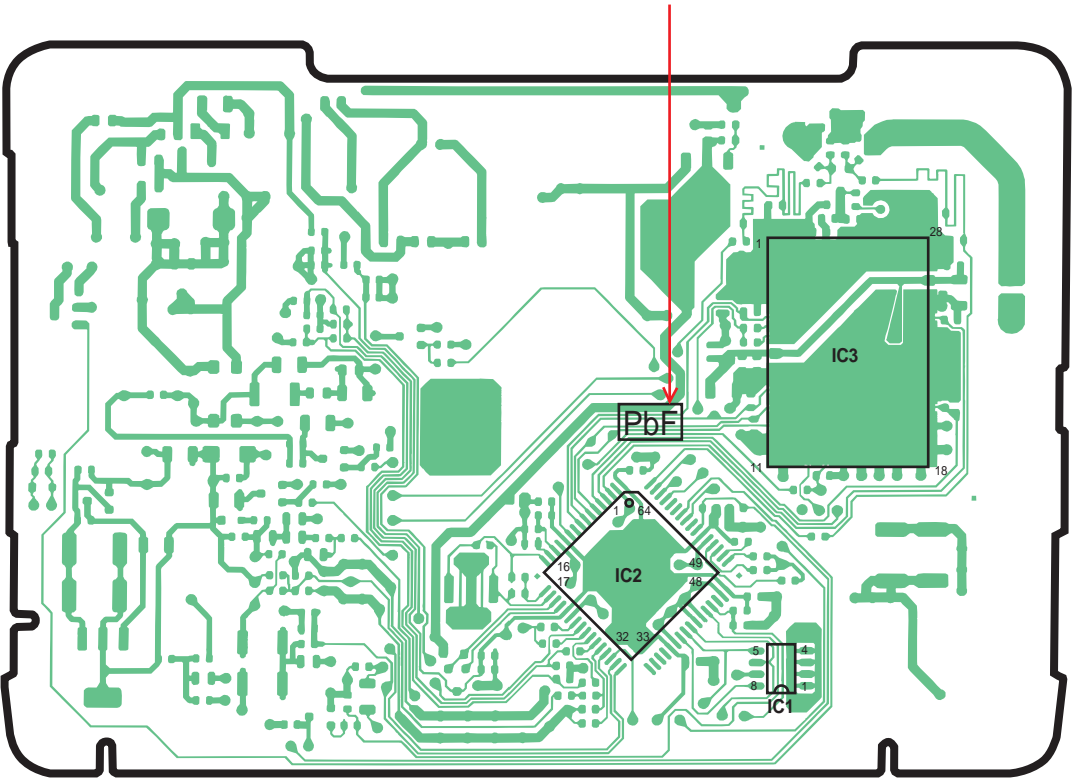
Marked
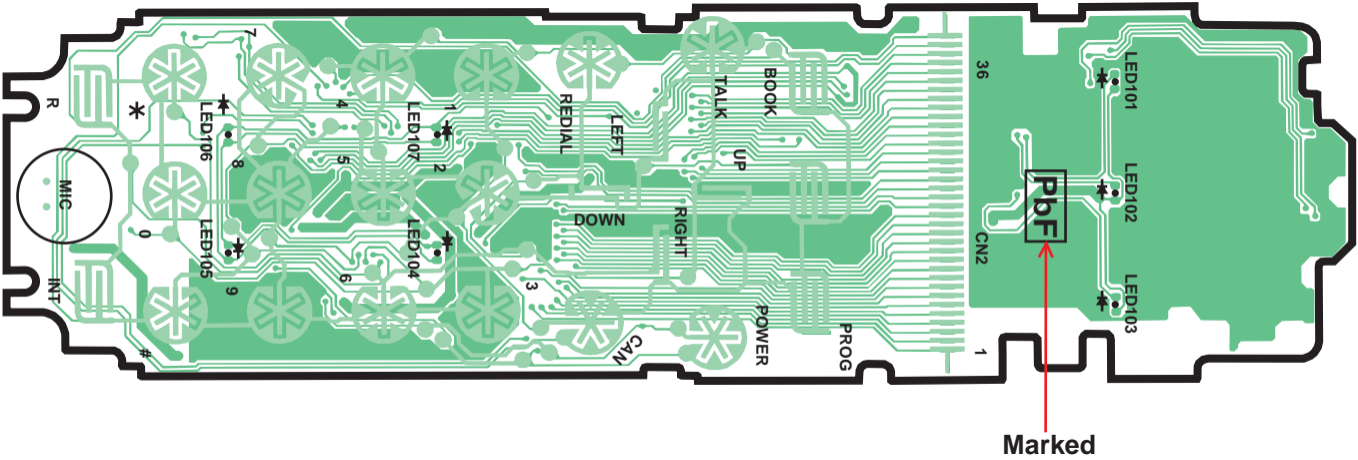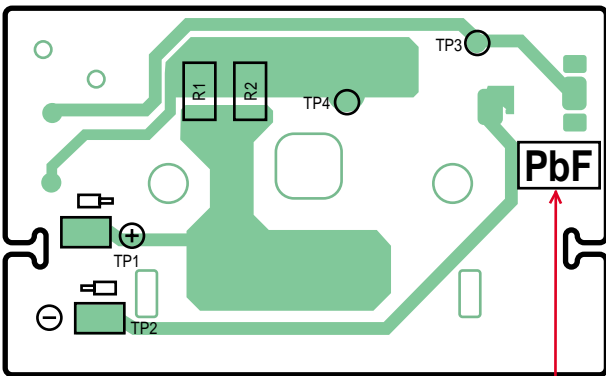
R1 R2
TP3
TP4
PbF
TP1
TP2
↑
Marked

(Component View)

J1
D1
PbF
↑
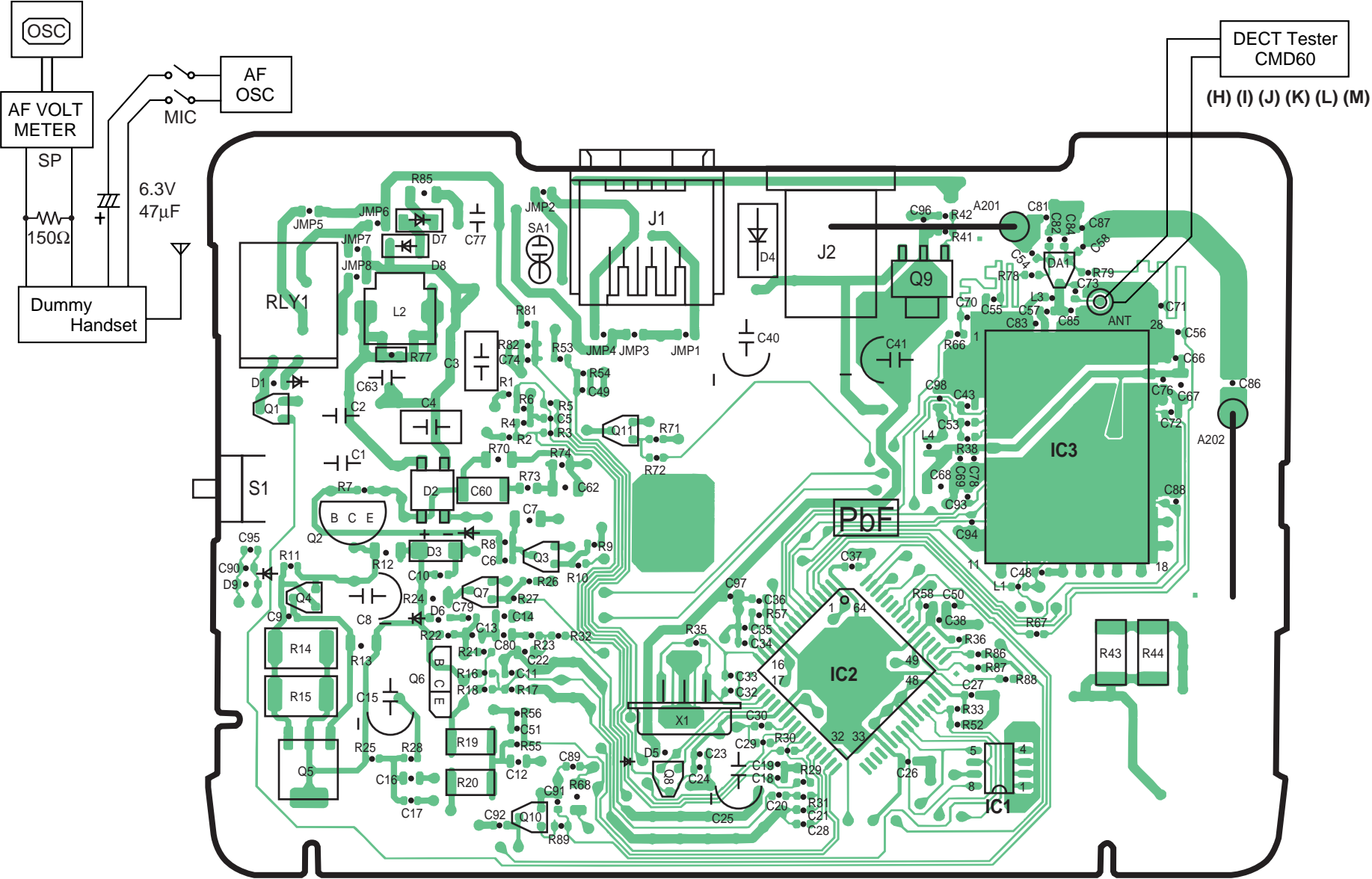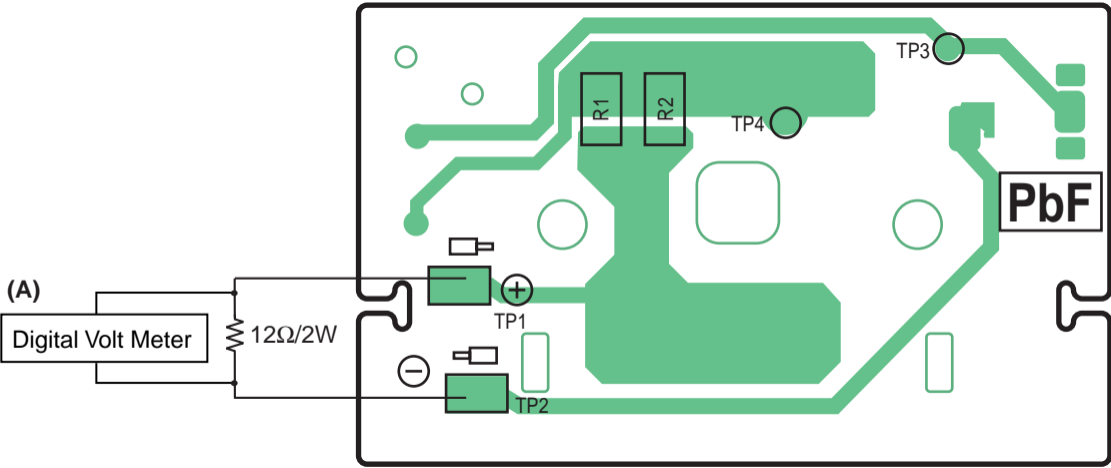**Marked**

(Flow Solder Side View)

CHG terminal is properly fit in the cabinet.

OK

NG

Rib
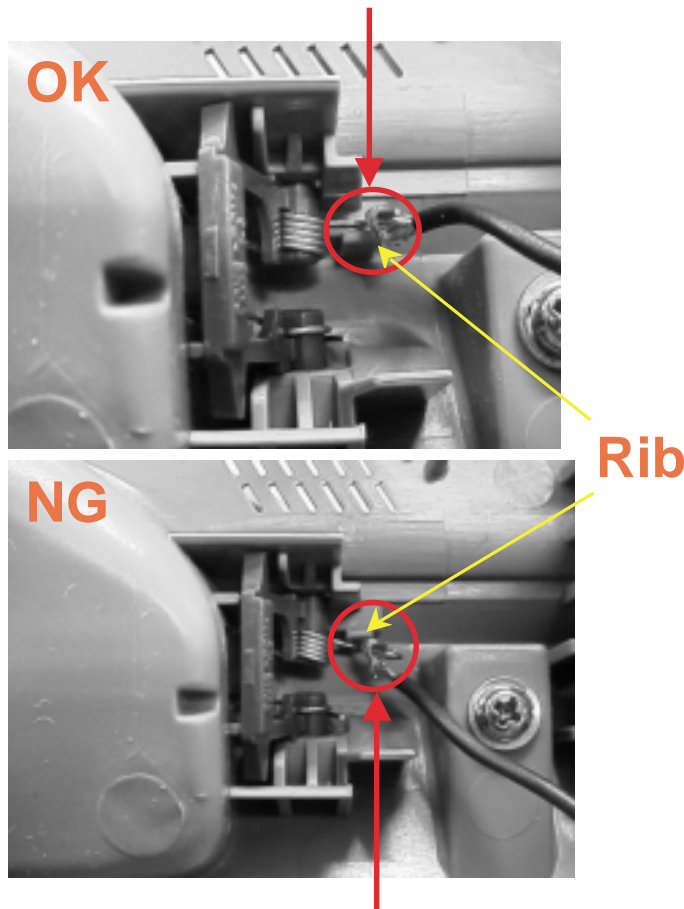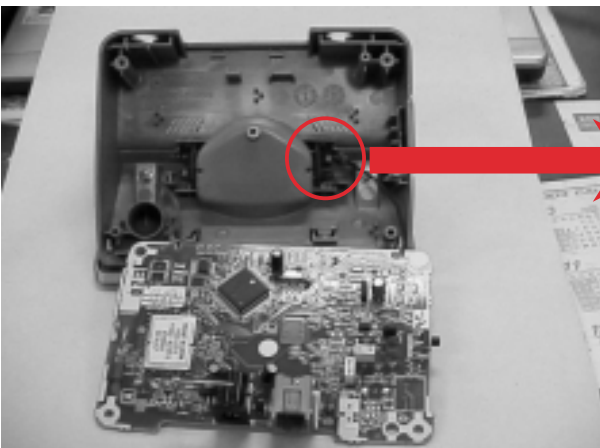
CHG terminal comes out of rib by pulling black lead wire when opening the cabinet and turning the PCB over. The terminal cannot have enough elastic force, cannot have good contact with handset, and it will result in charge problem.

OSC

AF VOLT METER

SP

150Ω

6.3V
47μF

AF OSC

MIC

Dummy Handset

DECT Tester CMD60

(H) (I) (J) (K) (L) (M)

JMP5
JMP6
JMP7
JMP8

R85
D7
C77

JMP2
SA1

J1

D4
J2

C96
R42
R41
A201

C81
C82
C84
C87
C68

C54
DA1
R79

R78
L3
C73

RLY1
L2

R77
C3
C63
C74
R82
R81
R53
JMP4 JMP3 JMP1
R54
C49

C40

C70
C55
C57
R66
C83
C85
ANT
28

C71
C56
C66

D1
Q1
C2
C4
R1
R6
R5
C5
R3
R70
R2
R74
R73
R4

R71
Q11
R72

C41

C98
C43
C53
R38
C68
C69
C78
C93
C94

IC3

C76
C67
C72

A202

C88

R7
D2
C60
C62
C7

R9
Q3
R26
R10

PbF

C37

C48
L1
11
18

C95
C90
D9
R11
R12
D3
C6
C10
R8

R24
Q7
R27

C97
C36
C57
C35
C34

R58 C50
C38
1 64

R67

Q4
C9
C8
D6
C79
C13
C14
R22
R23
R32

R35

16
17

IC2

R86
R36
R87
R88

49
48

R43 R44

R14
R13
R21
C80
C22
R16
R17
C11
C33
C32

C27
R33
R52

R15
Q6
C15
R18
R56
C51
R55

C30
R30
C29
R29
C19
C18

32 33

C26

5 4

8 1
IC1

Q5
R25 R28
C16
C19
C20
C17
C12
C89
R68
C91
C92 Q10
R89

D5
Q8
X1
C23
C24
C25
R31
C21
C20
C28

B C E
Q2

B C E
Q6

(A)

Digital Volt Meter

12Ω/2W

R1 R2

TP1

TP2

TP3

TP4

PbF

OSC

AF VOLT METER

AF OSC

LOOP Simulator

600Ω

Dummy Base Unit

(F) (G)

DC POWER 2.30 - 2.60V

BATTERY-

BATTERY+

Power Key

TP17   TP16

Oscilloscope

(A)

AF Volt Meter

8Ω

SP

+   −

(I) (J) (K) (L) (M)
(N) (O) (P)

DECT tester CMD60

ANTENNA   GND

CHARGE+

MIC-

AF Generator

6.3V 47μF   MIC+

(D) (E)

DC 6V

(D)

Current Probe

(D)

Oscilloscope

CHARGE-

SDA   SCL   GND

(C) (E) (F) (H)
(I) (O) (P)

PC

VBACK   GND

(B)

Digital Volt Meter

TP4V   GND

Digital Volt Meter

REV

+   −

150Ω

AF Volt Meter

Oscilloscope

GND   MCLK

(H)

Frequency Counter
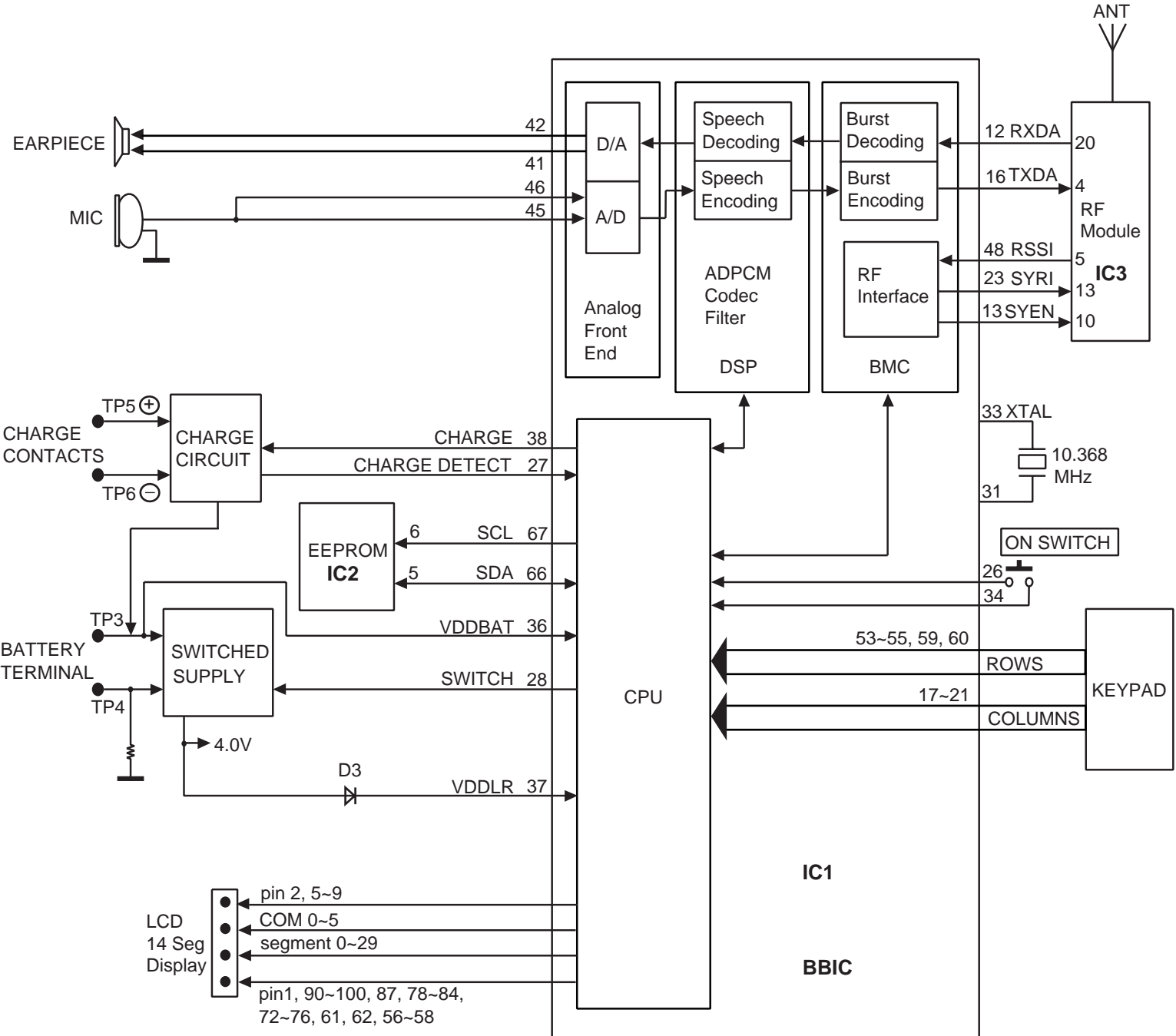
IC1

IC2

IC3

PbF

X1

L2

L3
MCLK

ANT
A201

KX-TCD430ALB/ALW BLOCK DIAGRAM (BASE UNIT)

KX-A143ALB/ALW BLOCK DIAGRAM (HANDSET)